

Ala	Phe	Gly	Gly	Asp	Ile	Val	Phe	Lys	Gly	Asn	Ser	Ser	Phe	Arg	Ala
225					230					235					240
Gln	Gly	Ser	Asp	Ala	Ile	Tyr	Phe	Ala	Gly	Lys	Glu	Ser	His	Ile	Thr
				245					250					255	
Ala	Leu	Asn	Ala	Thr	Glu	Gly	His	Ala	Ile	Val	Phe	His	Asp	Ala	Leu
			260					265					270		
Val	Phe	Glu	Asn	Leu	Lys	Glu	Arg	Lys	Ser	Ala	Glu	Val	Leu	Leu	Ile
		275					280					285			
Asn	Ser	Arg	Glu	Asn	Pro	Gly	Tyr	Thr	Gly	Ser	Ile	Arg	Phe	Leu	Glu
	290					295					300				
Ala	Glu	Ser	Lys	Val	Pro	Gln	Cys	Ile	His	Val	Gln	Gln	Gly	Ser	Leu
305					310					315					320
Glu	Leu	Leu	Asn	Gly	Ala	Thr	Leu	Cys	Ser	Tyr	Gly	Phe	Lys	Gln	Asp
				325					330					335	
Ala	Gly	Ala	Lys	Leu	Val	Leu	Ala	Ala	Gly	Ser	Lys	Leu	Lys	Ile	Leu
			340					345					350		
Asp	Ser	Gly	Thr	Pro	Val	Gln	Gly	His	Ala	Ile	Ser	Lys	Pro	Glu	Ala
		355					360					365			
Glu	Ile	Glu	Ser	Ser	Ser	Glu	Pro	Glu	Gly	Ala	His	Ser	Leu	Trp	Ile
	370					375					380				
Ala	Lys	Asn	Ala	Gln	Thr	Thr	Val	Pro	Met	Val	Asp	Ile	His	Thr	Ile
385					390					395					400
Ser	Val	Asp	Leu	Ala	Ser	Phe	Ser	Ser	Ser	Gln	Gln	Glu	Gly	Thr	Val
				405					410					415	
Glu	Ala	Pro	Gln	Val	Ile	Val	Pro	Gly	Gly	Ser	Tyr	Val	Arg	Ser	Gly
			420					425					430		
Glu	Leu	Asn	Leu	Glu	Leu	Val	Asn	Thr	Thr	Gly	Thr	Gly	Tyr	Glu	Asn
		435					440					445			
His	Ala	Leu	Leu	Lys	Asn	Glu	Ala	Lys	Val	Pro	Leu	Met	Ser	Phe	Val
	450					455					460				
Ala	Ser	Ser	Asp	Glu	Ala	Ser	Ala	Glu	Ile	Ser	Asn	Leu	Ser	Val	Ser
465					470					475					480
Asp	Leu	Gln	Ile	His	Val	Ala	Thr	Pro	Glu	Ile	Glu	Glu	Asp	Thr	Tyr
				485					490					495	
Gly	His	Met	Gly	Asp	Trp	Ser	Glu	Ala	Lys	Ile	Gln	Asp	Gly	Thr	Leu
			500					505					510		
Val	Ile	Asn	Trp	Asn	Pro	Thr	Gly	Tyr	Arg	Leu	Asp	Pro	Gln	Lys	Ala
		515					520					525			
Gly	Ala	Leu	Val	Phe	Asn	Ala	Leu	Trp	Glu	Glu	Gly	Ala	Val	Leu	Ser
	530					535					540				
Ala	Leu	Lys	Asn	Ala	Arg	Phe	Ala	His	Asn	Leu	Thr	Ala	Gln	Arg	Met
545					550					555					560
Glu	Phe	Asp	Tyr	Ser	Thr	Asn	Val	Trp	Gly	Phe	Ala	Phe	Gly	Gly	Phe
				565					570					575	
Arg	Thr	Leu	Ser	Ala	Glu	Asn	Leu	Val	Ala	Ile	Asp	Gly	Tyr	Lys	Gly
				580				585					590		
Ala	Tyr	Gly	Gly	Ala	Ser	Ala	Gly	Val	Asp	Ile	Gln	Leu	Met	Glu	Asp
		595					600					605			
Phe	Val	Leu	Gly	Val	Ser	Gly	Ala	Ala	Phe	Leu	Gly	Lys	Met	Asp	Ser
	610					615					620				
Gln	Lys	Phe	Asp	Ala	Glu	Val	Ser	Arg	Lys	Gly	Val	Val	Gly	Ser	Val
625					630					635					640
Tyr	Thr	Gly	Phe	Leu	Ala	Gly	Ser	Trp	Phe	Phe	Lys	Gly	Gln	Tyr	Ser
				645					650					655	
Leu	Gly	Glu	Thr	Gln	Asn	Asp	Met	Lys	Thr	Arg	Tyr	Gly	Val	Leu	Gly
			660					665					670		
Glu	Ser	Ser	Ala	Ser	Trp	Thr	Ser	Arg	Gly	Val	Leu	Ala	Asp	Ala	Leu
		675					680					685			
Val	Glu	Tyr	Arg	Ser	Leu	Val	Gly	Pro	Val	Arg	Pro	Thr	Phe	Tyr	Ala
	690					695					700				
Leu	His	Phe	Asn	Pro	Tyr	Val	Glu	Val	Ser	Tyr	Ala	Ser	Met	Lys	Phe

705					710					715				720
Pro	Gly	Phe	Thr	Glu	Gln	Gly	Arg	Glu	Ala	Arg	Ser	Phe	Glu	Asp
				725					730					735
Ser	Leu	Thr	Asn	Ile	Thr	Ile	Pro	Leu	Gly	Met	Lys	Phe	Glu	Leu
			740					745					750	
Phe	Ile	Lys	Gly	Gln	Phe	Ser	Glu	Val	Asn	Ser	Leu	Gly	Ile	Ser
		755					760					765		
Ala	Trp	Glu	Ala	Tyr	Arg	Lys	Val	Glu	Gly	Gly	Ala	Val	Gln	Leu
	770					775					780			
Glu	Ala	Gly	Phe	Asp	Trp	Glu	Gly	Ala	Pro	Met	Asp	Leu	Pro	Arg
785					790					795				800
Glu	Leu	Arg	Val	Ala	Leu	Glu	Asn	Asn	Thr	Glu	Trp	Ser	Ser	Tyr
			805						810					815
Ser	Thr	Val	Leu	Gly	Leu	Thr	Ala	Phe	Cys	Gly	Gly	Phe	Thr	Ser
			820					825					830	
Asp	Ser	Lys	Leu	Gly	Tyr	Glu	Ala	Asn	Thr	Gly	Leu	Arg	Leu	Ile
		835					840					845		

&lt;210&gt; 193

&lt;211&gt; 778

&lt;212&gt; PRT

&lt;213&gt; Chlamydia

&lt;400&gt; 193

Met	His	His	His	His	His	Gly	Leu	Ala	Ser	Cys	Val	Asp	Leu	His
1				5				10					15	
Ala	Gly	Gly	Gln	Ser	Val	Asn	Glu	Leu	Val	Tyr	Val	Gly	Pro	Gln
			20					25				30		
Val	Leu	Leu	Leu	Asp	Gln	Ile	Arg	Asp	Leu	Phe	Val	Gly	Ser	Lys
	35						40					45		
Ser	Gln	Ala	Glu	Gly	Gln	Tyr	Arg	Leu	Ile	Val	Gly	Asp	Pro	Ser
	50					55					60			
Phe	Gln	Glu	Lys	Asp	Ala	Asp	Thr	Leu	Pro	Gly	Lys	Val	Glu	Gln
65					70					75				80
Thr	Leu	Phe	Ser	Val	Thr	Asn	Pro	Val	Val	Phe	Gln	Gly	Val	Asp
			85					90					95	
Gln	Asp	Gln	Val	Ser	Ser	Gln	Gly	Leu	Ile	Cys	Ser	Phe	Thr	Ser
			100					105					110	
Asn	Leu	Asp	Ser	Pro	Arg	Asp	Gly	Glu	Ser	Phe	Leu	Gly	Ile	Ala
		115					120					125		Phe
Val	Gly	Asp	Ser	Ser	Lys	Ala	Gly	Ile	Thr	Leu	Thr	Asp	Val	Lys
	130					135					140			
Ser	Leu	Ser	Gly	Ala	Ala	Leu	Tyr	Ser	Thr	Glu	Asp	Leu	Ile	Phe
145				150						155				160
Lys	Ile	Lys	Gly	Gly	Leu	Glu	Phe	Ala	Ser	Cys	Ser	Ser	Leu	Glu
			165						170				175	
Gly	Gly	Ala	Cys	Ala	Ala	Gln	Ser	Ile	Leu	Ile	His	Asp	Cys	Gln
		180						185				190		Gly
Leu	Gln	Val	Lys	His	Cys	Thr	Thr	Ala	Val	Asn	Ala	Glu	Gly	Ser
		195					200					205		
Ala	Asn	Asp	His	Leu	Gly	Phe	Gly	Gly	Gly	Ala	Phe	Phe	Val	Thr
	210					215					220			
Ser	Leu	Ser	Gly	Glu	Lys	Ser	Leu	Tyr	Met	Pro	Ala	Gly	Asp	Met
225					230					235				240
Val	Ala	Asn	Cys	Asp	Gly	Ala	Ile	Ser	Phe	Glu	Gly	Asn	Ser	Ala
			245						250					255
Phe	Ala	Asn	Gly	Ala	Ile	Ala	Ala	Ser	Gly	Lys	Val	Leu	Phe	Val
		260					265					270		
Ala	Asn	Asp	Lys	Lys	Thr	Ser	Phe	Ile	Glu	Asn	Arg	Ala	Leu	Ser
	275						280					285		Gly
Gly	Ala	Ile	Ala	Ala	Ser	Ser	Asp	Ile	Ala	Phe	Gln	Asn	Cys	Ala

290	295	300
Leu Val Phe Lys Gly Asn Cys Ala Ile Gly Thr Glu Asp Lys Gly Ser		
305	310	315
Leu Gly Gly Gly Ala Ile Ser Ser Leu Gly Thr Val Leu Leu Gln Gly		
	325	330
Asn His Gly Ile Thr Cys Asp Lys Asn Glu Ser Ala Ser Gln Gly Gly		
	340	345
Ala Ile Phe Gly Lys Asn Cys Gln Ile Ser Asp Asn Glu Gly Pro Val		
	355	360
Val Phe Arg Asp Ser Thr Ala Cys Leu Gly Gly Gly Ala Ile Ala Ala		
	370	375
Gln Glu Ile Val Ser Ile Gln Asn Asn Gln Ala Gly Ile Ser Phe Glu		
385	390	395
Gly Gly Lys Ala Ser Phe Gly Gly Gly Ile Ala Cys Gly Ser Phe Ser		
	405	410
Ser Ala Gly Gly Ala Ser Val Leu Gly Thr Ile Asp Ile Ser Lys Asn		
	420	425
Leu Gly Ala Ile Ser Phe Ser Arg Thr Leu Cys Thr Thr Ser Asp Leu		
	435	440
Gly Gln Met Glu Tyr Gln Gly Gly Gly Ala Leu Phe Gly Glu Asn Ile		
	450	455
Ser Leu Ser Glu Asn Ala Gly Val Leu Thr Phe Lys Asp Asn Ile Val		
465	470	475
Lys Thr Phe Ala Ser Asn Gly Lys Ile Leu Gly Gly Gly Ala Ile Leu		
	485	490
Ala Thr Gly Lys Val Glu Ile Thr Asn Asn Ser Gly Gly Ile Ser Phe		
	500	505
Thr Gly Asn Ala Arg Ala Pro Gln Ala Leu Pro Thr Gln Glu Glu Phe		
	515	520
Pro Leu Phe Ser Lys Lys Glu Gly Arg Pro Leu Ser Ser Gly Tyr Ser		
	530	535
Gly Gly Gly Ala Ile Leu Gly Arg Glu Val Ala Ile Leu His Asn Ala		
545	550	555
Ala Val Val Phe Glu Gln Asn Arg Leu Gln Cys Ser Glu Glu Glu Ala		
	565	570
Thr Leu Leu Gly Cys Cys Gly Gly Gly Ala Val His Gly Met Asp Ser		
	580	585
Thr Ser Ile Val Gly Asn Ser Ser Val Arg Phe Gly Asn Asn Tyr Ala		
	595	600
Met Gly Gln Gly Val Ser Gly Gly Ala Leu Leu Ser Lys Thr Val Gln		
	610	615
Leu Ala Gly Asn Gly Ser Val Asp Phe Ser Arg Asn Ile Ala Ser Leu		
625	630	635
Gly Gly Gly Ala Leu Gln Ala Ser Glu Gly Asn Cys Glu Leu Val Asp		
	645	650
Asn Gly Tyr Val Leu Phe Arg Asp Asn Arg Gly Arg Val Tyr Gly Gly		
	660	665
Ala Ile Ser Cys Leu Arg Gly Asp Val Val Ile Ser Gly Asn Lys Gly		
	675	680
Arg Val Glu Phe Lys Asp Asn Ile Ala Thr Arg Leu Tyr Val Glu Glu		
	690	695
Thr Val Glu Lys Val Glu Glu Val Glu Pro Ala Pro Glu Gln Lys Asp		
705	710	715
Asn Asn Glu Leu Ser Phe Leu Gly Ser Val Glu Gln Ser Phe Ile Thr		
	725	730
Ala Ala Asn Gln Ala Leu Phe Ala Ser Glu Asp Gly Asp Leu Ser Pro		
	740	745
Glu Ser Ser Ile Ser Ser Glu Glu Leu Ala Lys Arg Arg Glu Cys Ala		
	755	760
Gly Gly Ala Asp Ser Ser Arg Ser Gly Cys		765
770	775	

<210> 194  
 <211> 948  
 <212> PRT  
 <213> Chlamydia

<400> 194

Met	Ala	Ser	Met	His	His	His	His	His	His	Val	Lys	Ile	Glu	Asn	Phe
1				5					10					15	
Ser	Gly	Gln	Gly	Ile	Phe	Ser	Gly	Asn	Lys	Ala	Ile	Asp	Asn	Thr	Thr
		20						25					30		
Glu	Gly	Ser	Ser	Ser	Lys	Ser	Asn	Val	Leu	Gly	Gly	Ala	Val	Tyr	Ala
		35					40					45			
Lys	Thr	Leu	Phe	Asn	Leu	Asp	Ser	Gly	Ser	Ser	Arg	Arg	Thr	Val	Thr
	50					55					60				
Phe	Ser	Gly	Asn	Thr	Val	Ser	Ser	Gln	Ser	Thr	Thr	Gly	Gln	Val	Ala
65					70					75					80
Gly	Gly	Ala	Ile	Tyr	Ser	Pro	Thr	Val	Thr	Ile	Ala	Thr	Pro	Val	Val
			85						90					95	
Phe	Ser	Lys	Asn	Ser	Ala	Thr	Asn	Asn	Ala	Asn	Asn	Ala	Thr	Asp	Thr
			100					105					110		
Gln	Arg	Lys	Asp	Thr	Phe	Gly	Gly	Ala	Ile	Gly	Ala	Thr	Ser	Ala	Val
		115					120					125			
Ser	Leu	Ser	Gly	Gly	Ala	His	Phe	Leu	Glu	Asn	Val	Ala	Asp	Leu	Gly
	130					135					140				
Ser	Ala	Ile	Gly	Leu	Val	Pro	Asp	Thr	Gln	Asn	Thr	Glu	Thr	Val	Lys
145					150					155					160
Leu	Glu	Ser	Gly	Ser	Tyr	Tyr	Phe	Glu	Lys	Asn	Lys	Ala	Leu	Lys	Arg
				165					170					175	
Ala	Thr	Ile	Tyr	Ala	Pro	Val	Val	Ser	Ile	Lys	Ala	Tyr	Thr	Ala	Thr
			180					185					190		
Phe	Asn	Gln	Asn	Arg	Ser	Leu	Glu	Glu	Gly	Ser	Ala	Ile	Tyr	Phe	Thr
		195					200					205			
Lys	Glu	Ala	Ser	Ile	Glu	Ser	Leu	Gly	Ser	Val	Leu	Phe	Thr	Gly	Asn
	210					215					220				
Leu	Val	Thr	Pro	Thr	Leu	Ser	Thr	Thr	Thr	Glu	Gly	Thr	Pro	Ala	Thr
225					230					235					240
Thr	Ser	Gly	Asp	Val	Thr	Lys	Tyr	Gly	Ala	Ala	Ile	Phe	Gly	Gln	Ile
				245					250					255	
Ala	Ser	Ser	Asn	Gly	Ser	Gln	Thr	Asp	Asn	Leu	Pro	Leu	Lys	Leu	Ile
			260					265					270		
Ala	Ser	Gly	Asn	Ile	Cys	Phe	Arg	Asn	Asn	Glu	Tyr	Arg	Pro	Thr	
		275				280					285				
Ser	Ser	Asp	Thr	Gly	Thr	Ser	Thr	Phe	Cys	Ser	Ile	Ala	Gly	Asp	Val
	290					295					300				
Lys	Leu	Thr	Met	Gln	Ala	Ala	Lys	Gly	Lys	Thr	Ile	Ser	Phe	Phe	Asp
305					310					315					320
Ala	Ile	Arg	Thr	Ser	Thr	Lys	Lys	Thr	Gly	Thr	Gln	Ala	Thr	Ala	Tyr
				325					330					335	
Asp	Thr	Leu	Asp	Ile	Asn	Lys	Ser	Glu	Asp	Ser	Glu	Thr	Val	Asn	Ser
			340					345					350		
Ala	Phe	Thr	Gly	Thr	Ile	Leu	Phe	Ser	Ser	Glu	Leu	His	Glu	Asn	Lys
		355					360					365			
Ser	Tyr	Ile	Pro	Gln	Asn	Val	Val	Leu	His	Ser	Gly	Ser	Leu	Val	Leu
	370					375					380				
Lys	Pro	Asn	Thr	Glu	Leu	His	Val	Ile	Ser	Phe	Glu	Gln	Lys	Glu	Gly
385					390					395					400
Ser	Ser	Leu	Val	Met	Thr	Pro	Gly	Ser	Val	Leu	Ser	Asn	Gln	Thr	Val
				405					410					415	
Ala	Asp	Gly	Ala	Leu	Val	Ile	Asn	Asn	Met	Thr	Ile	Asp	Leu	Ser	Ser
			420					425					430		



Val	Glu	Lys	Asn	Gly	Ile	Ala	Glu	Gly	Asn	Ile	Phe	Thr	Pro	Pro	Glu
		435					440					445			
Leu	Arg	Ile	Ile	Asp	Thr	Thr	Thr	Ser	Gly	Ser	Gly	Gly	Thr	Pro	Ser
	450					455					460				
Thr	Asp	Ser	Glu	Ser	Asn	Gln	Asn	Ser	Asp	Asp	Thr	Lys	Glu	Gln	Asn
	465				470				475						480
Asn	Asn	Asp	Ala	Ser	Asn	Gln	Gly	Glu	Ser	Ala	Asn	Gly	Ser	Ser	Ser
			485					490						495	
Pro	Ala	Val	Ala	Ala	Ala	His	Thr	Ser	Arg	Thr	Arg	Asn	Phe	Ala	Ala
		500						505					510		
Ala	Ala	Thr	Ala	Thr	Pro	Thr	Thr	Thr	Pro	Thr	Ala	Thr	Thr	Thr	Thr
		515					520					525			
Ser	Asn	Gln	Val	Ile	Leu	Gly	Gly	Glu	Ile	Lys	Leu	Ile	Asp	Pro	Asn
	530					535					540				
Gly	Thr	Phe	Phe	Gln	Asn	Pro	Ala	Leu	Arg	Ser	Asp	Gln	Gln	Ile	Ser
	545				550					555					560
Leu	Leu	Val	Leu	Pro	Thr	Asp	Ser	Ser	Lys	Met	Gln	Ala	Gln	Lys	Ile
				565					570					575	
Val	Leu	Thr	Gly	Asp	Ile	Ala	Pro	Gln	Lys	Gly	Tyr	Thr	Gly	Thr	Leu
			580					585					590		
Thr	Leu	Asp	Pro	Asp	Gln	Leu	Gln	Asn	Gly	Thr	Ile	Ser	Ala	Leu	Trp
		595				600						605			
Lys	Phe	Asp	Ser	Tyr	Arg	Gln	Trp	Ala	Tyr	Val	Pro	Arg	Asp	Asn	His
	610					615					620				
Phe	Tyr	Ala	Asn	Ser	Ile	Leu	Gly	Ser	Gln	Met	Ser	Met	Val	Thr	Val
	625				630					635					640
Lys	Gln	Gly	Leu	Leu	Asn	Asp	Lys	Met	Asn	Leu	Ala	Arg	Phe	Asp	Glu
			645					650						655	
Val	Ser	Tyr	Asn	Asn	Leu	Trp	Ile	Ser	Gly	Leu	Gly	Thr	Met	Leu	Ser
			660					665					670		
Gln	Val	Gly	Thr	Pro	Thr	Ser	Glu	Glu	Phe	Thr	Tyr	Tyr	Ser	Arg	Gly
		675					680					685			
Ala	Ser	Val	Ala	Leu	Asp	Ala	Lys	Pro	Ala	His	Asp	Val	Ile	Val	Gly
		690				695					700				
Ala	Ala	Phe	Ser	Lys	Met	Ile	Gly	Lys	Thr	Lys	Ser	Leu	Lys	Arg	Glu
	705				710					715					720
Asn	Asn	Tyr	Thr	His	Lys	Gly	Ser	Glu	Tyr	Ser	Tyr	Gln	Ala	Ser	Val
				725					730					735	
Tyr	Gly	Gly	Lys	Pro	Phe	His	Phe	Val	Ile	Asn	Lys	Lys	Thr	Glu	Lys
		740						745					750		
Ser	Leu	Pro	Leu	Leu	Leu	Gln	Gly	Val	Ile	Ser	Tyr	Gly	Tyr	Ile	Lys
		755					760					765			
His	Asp	Thr	Val	Thr	His	Tyr	Pro	Thr	Ile	Arg	Glu	Arg	Asn	Gln	Gly
	770					775					780				
Glu	Trp	Glu	Asp	Leu	Gly	Trp	Leu	Thr	Ala	Leu	Arg	Val	Ser	Ser	Val
	785				790					795					800
Leu	Arg	Thr	Pro	Ala	Gln	Gly	Asp	Thr	Lys	Arg	Ile	Thr	Val	Tyr	Gly
			805						810					815	
Glu	Leu	Glu	Tyr	Ser	Ser	Ile	Arg	Gln	Lys	Gln	Phe	Thr	Glu	Thr	Glu
			820					825					830		
Tyr	Asp	Pro	Arg	Tyr	Phe	Asp	Asn	Cys	Thr	Tyr	Arg	Asn	Leu	Ala	Ile
		835					840					845			
Pro	Met	Gly	Leu	Ala	Phe	Glu	Gly	Glu	Leu	Ser	Gly	Asn	Asp	Ile	Leu
		850				855					860				
Met	Tyr	Asn	Arg	Phe	Ser	Val	Ala	Tyr	Met	Pro	Ser	Ile	Tyr	Arg	Asn
	865				870					875					880
Ser	Pro	Thr	Cys	Lys	Tyr	Gln	Val	Leu	Ser	Ser	Gly	Glu	Gly	Gly	Glu
				885					890					895	
Ile	Ile	Cys	Gly	Val	Pro	Thr	Arg	Asn	Ser	Ala	Arg	Gly	Glu	Tyr	Ser
			900					905					910		
Thr	Gln	Leu	Tyr	Pro	Gly	Pro	Leu	Trp	Thr	Leu	Tyr	Gly	Ser	Tyr	Thr

915  
 Ile Glu Ala Asp Ala His Thr Leu Ala His Met Met Asn Cys Gly Ala  
 930 935 940  
 Arg Met Thr Phe  
 945

<210> 195  
 <211> 821  
 <212> PRT  
 <213> Chlamydia

<400> 195  
 Met His His His His His His Glu Ala Ser Ser Ile Gln Asp Gln Ile  
 1 5 10 15  
 Lys Asn Thr Asp Cys Asn Val Ser Lys Val Gly Tyr Ser Thr Ser Gln  
 20 25 30  
 Ala Phe Thr Asp Met Met Leu Ala Asp Asn Thr Glu Tyr Arg Ala Ala  
 35 40 45  
 Asp Ser Val Ser Phe Tyr Asp Phe Ser Thr Ser Ser Gly Leu Pro Arg  
 50 55 60  
 Lys His Leu Ser Ser Ser Ser Glu Ala Ser Pro Thr Thr Glu Gly Val  
 65 70 75 80  
 Ser Ser Ser Ser Ser Gly Glu Asn Thr Glu Asn Ser Gln Asp Ser Ala  
 85 90 95  
 Pro Ser Ser Gly Glu Thr Asp Lys Lys Thr Glu Glu Glu Leu Asp Asn  
 100 105 110  
 Gly Gly Ile Ile Tyr Ala Arg Glu Lys Leu Thr Ile Ser Glu Ser Gln  
 115 120 125  
 Asp Ser Leu Ser Asn Pro Ser Ile Glu Leu His Asp Asn Ser Phe Phe  
 130 135 140  
 Phe Gly Glu Gly Glu Val Ile Phe Asp His Arg Val Ala Leu Lys Asn  
 145 150 155 160  
 Gly Gly Ala Ile Tyr Gly Glu Lys Glu Val Val Phe Glu Asn Ile Lys  
 165 170 175  
 Ser Leu Leu Val Glu Val Asn Ile Ser Val Glu Lys Gly Gly Ser Val  
 180 185 190  
 Tyr Ala Lys Glu Arg Val Ser Leu Glu Asn Val Thr Glu Ala Thr Phe  
 195 200 205  
 Ser Ser Asn Gly Gly Glu Gln Gly Gly Gly Gly Ile Tyr Ser Glu Gln  
 210 215 220  
 Asp Met Leu Ile Ser Asp Cys Asn Asn Val His Phe Gln Gly Asn Ala  
 225 230 235 240  
 Ala Gly Ala Thr Ala Val Lys Gln Cys Leu Asp Glu Glu Met Ile Val  
 245 250 255  
 Leu Leu Thr Glu Cys Val Asp Ser Leu Ser Glu Asp Thr Leu Asp Ser  
 260 265 270  
 Thr Pro Glu Thr Glu Gln Thr Lys Ser Asn Gly Asn Gln Asp Gly Ser  
 275 280 285  
 Ser Glu Thr Lys Asp Thr Gln Val Ser Glu Ser Pro Glu Ser Thr Pro  
 290 295 300  
 Ser Pro Asp Asp Val Leu Gly Lys Gly Gly Ile Tyr Thr Glu Lys  
 305 310 315 320  
 Ser Leu Thr Ile Thr Gly Ile Thr Gly Thr Ile Asp Phe Val Ser Asn  
 325 330 335  
 Ile Ala Thr Asp Ser Gly Ala Gly Val Phe Thr Lys Glu Asn Leu Ser  
 340 345 350  
 Cys Thr Asn Thr Asn Ser Leu Gln Phe Leu Lys Asn Ser Ala Gly Gln  
 355 360 365  
 His Gly Gly Gly Ala Tyr Val Thr Gln Thr Met Ser Val Thr Asn Thr  
 370 375 380  
 Thr Ser Glu Ser Ile Thr Thr Pro Pro Leu Val Gly Glu Val Ile Phe

385					390					395				400
Ser	Glu	Asn	Thr	Ala	Lys	Gly	His	Gly	Gly	Gly	Ile	Cys	Thr	Asn
				405					410					415
Leu	Ser	Leu	Ser	Asn	Leu	Lys	Thr	Val	Thr	Leu	Thr	Lys	Asn	Ser
				420					425					430
Lys	Glu	Ser	Gly	Gly	Ala	Ile	Phe	Thr	Asp	Leu	Ala	Ser	Ile	Pro
				435					440					445
Thr	Asp	Thr	Pro	Glu	Ser	Ser	Thr	Pro	Ser	Ser	Ser	Ser	Pro	Ala
				450					455					460
Thr	Pro	Glu	Val	Val	Ala	Ser	Ala	Lys	Ile	Asn	Arg	Phe	Phe	Ala
				465					470					480
Thr	Ala	Glu	Pro	Ala	Ala	Pro	Ser	Leu	Thr	Glu	Ala	Glu	Ser	Asp
				485					490					495
Thr	Asp	Gln	Thr	Glu	Thr	Ser	Asp	Thr	Asn	Ser	Asp	Ile	Asp	Val
				500					505					510
Ile	Glu	Asn	Ile	Leu	Asn	Val	Ala	Ile	Asn	Gln	Asn	Thr	Ser	Ala
				515					520					525
Lys	Gly	Gly	Ala	Ile	Tyr	Gly	Lys	Lys	Ala	Lys	Leu	Ser	Arg	Ile
				530					535					540
Asn	Leu	Glu	Leu	Ser	Gly	Asn	Ser	Ser	Gln	Asp	Val	Gly	Gly	Gly
				545					550					560
Cys	Leu	Thr	Glu	Ser	Val	Glu	Phe	Asp	Ala	Ile	Gly	Ser	Leu	Leu
				565					570					575
His	Tyr	Asn	Ser	Ala	Ala	Lys	Glu	Gly	Gly	Val	Ile	His	Ser	Lys
				580					585					590
Val	Thr	Leu	Ser	Asn	Leu	Lys	Ser	Thr	Phe	Thr	Phe	Ala	Asp	Asn
				595					600					605
Val	Lys	Ala	Ile	Val	Glu	Ser	Thr	Pro	Glu	Ala	Pro	Glu	Glu	Ile
				610					615					620
Pro	Val	Glu	Gly	Glu	Glu	Ser	Thr	Ala	Thr	Glu	Asn	Pro	Asn	Ser
				625					630					640
Thr	Glu	Gly	Ser	Ser	Ala	Asn	Thr	Asn	Leu	Glu	Gly	Ser	Gln	Gly
				645					650					655
Thr	Ala	Asp	Thr	Gly	Thr	Gly	Val	Val	Asn	Asn	Glu	Ser	Gln	Asp
				660					665					670
Ser	Asp	Thr	Gly	Asn	Ala	Glu	Ser	Gly	Glu	Gln	Leu	Gln	Asp	Ser
				675					680					685
Gln	Ser	Asn	Glu	Glu	Asn	Thr	Leu	Pro	Asn	Ser	Ser	Ile	Asp	Gln
				690					695					700
Asn	Glu	Asn	Thr	Asp	Glu	Ser	Ser	Asp	Ser	His	Thr	Glu	Glu	Ile
				705					710					720
Asp	Glu	Ser	Val	Ser	Ser	Ser	Ser	Lys	Ser	Gly	Ser	Ser	Thr	Pro
				725					730					735
Asp	Gly	Gly	Ala	Ala	Ser	Ser	Gly	Ala	Pro	Ser	Gly	Asp	Gln	Ser
				740					745					750
Ser	Ala	Asn	Ala	Cys	Leu	Ala	Lys	Ser	Tyr	Ala	Ala	Ser	Thr	Asp
				755					760					765
Ser	Pro	Val	Ser	Asn	Ser	Ser	Gly	Ser	Asp	Val	Thr	Ala	Ser	Ser
				770					775					780
Asn	Pro	Asp	Ser	Ser	Ser	Ser	Gly	Asp	Ser	Ala	Gly	Asp	Ser	Glu
				785					790					800
Pro	Thr	Glu	Pro	Glu	Ala	Gly	Ser	Thr	Thr	Glu	Thr	Pro	Thr	Leu
				805					810					815
Gly	Gly	Gly	Ala	Ile										
				820										

&lt;210&gt; 196

&lt;211&gt; 525

&lt;212&gt; PRT

&lt;213&gt; Chlamydia

&lt;400&gt; 196

Met	His	His	His	His	His	His	Thr	Ala	Ala	Ser	Asp	Asn	Phe	Gln	Leu
1				5					10					15	
Ser	Gln	Gly	Gly	Gln	Gly	Phe	Ala	Ile	Pro	Ile	Gly	Gln	Ala	Met	Ala
			20					25					30		
Ile	Ala	Gly	Gln	Ile	Lys	Leu	Pro	Thr	Val	His	Ile	Gly	Pro	Thr	Ala
		35				40						45			
Phe	Leu	Gly	Leu	Gly	Val	Val	Asp	Asn	Asn	Gly	Asn	Gly	Ala	Arg	Val
	50					55					60				
Gln	Arg	Val	Val	Gly	Ser	Ala	Pro	Ala	Ala	Ser	Leu	Gly	Ile	Ser	Thr
65					70					75				80	
Gly	Asp	Val	Ile	Thr	Ala	Val	Asp	Gly	Ala	Pro	Ile	Asn	Ser	Ala	Thr
				85					90					95	
Ala	Met	Ala	Asp	Ala	Leu	Asn	Gly	His	His	Pro	Gly	Asp	Val	Ile	Ser
			100					105					110		
Val	Thr	Trp	Gln	Thr	Lys	Ser	Gly	Gly	Thr	Arg	Thr	Gly	Asn	Val	Thr
		115					120					125			
Leu	Ala	Glu	Gly	Pro	Pro	Ala	Glu	Phe	Pro	Leu	Val	Pro	Arg	Gly	Ser
	130					135					140				
Pro	Leu	Pro	Val	Gly	Asn	Pro	Ala	Glu	Pro	Ser	Leu	Leu	Ile	Asp	Gly
145					150					155					160
Thr	Met	Trp	Glu	Gly	Ala	Ser	Gly	Asp	Pro	Cys	Asp	Pro	Cys	Ala	Thr
				165				170						175	
Trp	Cys	Asp	Ala	Ile	Ser	Ile	Arg	Ala	Gly	Tyr	Tyr	Gly	Asp	Tyr	Val
			180					185					190		
Phe	Asp	Arg	Val	Leu	Lys	Val	Asp	Val	Asn	Lys	Thr	Phe	Ser	Gly	Met
		195					200					205			
Ala	Ala	Thr	Pro	Thr	Gln	Ala	Ile	Gly	Asn	Ala	Ser	Asn	Thr	Asn	Gln
	210					215					220				
Pro	Glu	Ala	Asn	Gly	Arg	Pro	Asn	Ile	Ala	Tyr	Gly	Arg	His	Met	Gln
225					230					235					240
Asp	Ala	Glu	Trp	Phe	Ser	Asn	Ala	Ala	Phe	Leu	Ala	Leu	Asn	Ile	Trp
				245				250						255	
Asp	Arg	Phe	Asp	Ile	Phe	Cys	Thr	Leu	Gly	Ala	Ser	Asn	Gly	Tyr	Phe
			260					265					270		
Lys	Ala	Ser	Ser	Ala	Ala	Phe	Asn	Leu	Val	Gly	Leu	Ile	Gly	Phe	Ser
		275					280					285			
Ala	Ala	Ser	Ser	Ile	Ser	Thr	Asp	Leu	Pro	Met	Gln	Leu	Pro	Asn	Val
		290				295					300				
Gly	Ile	Thr	Gln	Gly	Val	Val	Glu	Phe	Tyr	Thr	Asp	Thr	Ser	Phe	Ser
305					310					315					320
Trp	Ser	Val	Gly	Ala	Arg	Gly	Ala	Leu	Trp	Glu	Cys	Gly	Cys	Ala	Thr
				325					330					335	
Leu	Gly	Ala	Glu	Phe	Gln	Tyr	Ala	Gln	Ser	Asn	Pro	Lys	Ile	Glu	Met
			340					345					350		
Leu	Asn	Val	Thr	Ser	Ser	Pro	Ala	Gln	Phe	Val	Ile	His	Lys	Pro	Arg
		355					360					365			
Gly	Tyr	Lys	Gly	Ala	Ser	Ser	Asn	Phe	Pro	Leu	Pro	Ile	Thr	Ala	Gly
	370					375					380				
Thr	Thr	Glu	Ala	Thr	Asp	Thr	Lys	Ser	Ala	Thr	Ile	Lys	Tyr	His	Glu
385					390					395					400
Trp	Gln	Val	Gly	Leu	Ala	Leu	Ser	Tyr	Arg	Leu	Asn	Met	Leu	Val	Pro
				405					410					415	
Tyr	Ile	Gly	Val	Asn	Trp	Ser	Arg	Ala	Thr	Phe	Asp	Ala	Asp	Thr	Ile
			420					425					430		
Arg	Ile	Ala	Gln	Pro	Lys	Leu	Lys	Ser	Glu	Ile	Leu	Asn	Ile	Thr	Thr
		435					440					445			
Trp	Asn	Pro	Ser	Leu	Ile	Gly	Ser	Thr	Thr	Ala	Leu	Pro	Asn	Asn	Ser
	450					455					460				
Gly	Lys	Asp	Val	Leu	Ser	Asp	Val	Leu	Gln	Ile	Ala	Ser	Ile	Gln	Ile
465					470					475					480

Asn Lys Met Lys Ser Arg Lys Ala Cys Gly Val Ala Val Gly Ala Thr  
                             485                            490                            495  
 Leu Ile Asp Ala Asp Lys Trp Ser Ile Thr Gly Glu Ala Arg Leu Ile  
                             500                            505                            510  
 Asn Glu Arg Ala Ala His Met Asn Ala Gln Phe Arg Phe  
                             515                            520                            525

<210> 197  
 <211> 43  
 <212> DNA  
 <213> Chlamydia

<400> 197  
 gataggcgcg ccgcaatcat gaaatttatg tcagctactg ctg 43

<210> 198  
 <211> 34  
 <212> DNA  
 <213> Chlamydia

<400> 198  
 cagaacgcgt ttagaatgtc atacgagcac cgca 34

<210> 199  
 <211> 6  
 <212> DNA  
 <213> Chlamydia

<400> 199  
 gcaatc 6

<210> 200  
 <211> 34  
 <212> DNA  
 <213> Chlamydia

<400> 200  
 tgcaatcatg agttcgcaga aagatataaa aagc 34

<210> 201  
 <211> 38  
 <212> DNA  
 <213> Chlamydia

<400> 201  
 cagagctagc ttaaaagatc aatcgcaatc cagtattc 38

<210> 202  
 <211> 5  
 <212> DNA  
 <213> Chlamydia

<400> 202  
 caatc 5

<210> 203  
 <211> 31  
 <212> DNA  
 <213> Chlamydia

<400> 203

tgcaatcatg aaaaaagcgt ttttcttttt c 31

<210> 204  
<211> 31  
<212> DNA  
<213> Chlamydia

<400> 204  
cagaacgcgt ctagaatcgc agagcaattt c 31

<210> 205  
<211> 30  
<212> DNA  
<213> Chlamydia

<400> 205  
gtgcaatcat gattcctcaa ggaatttacg 30

<210> 206  
<211> 31  
<212> DNA  
<213> Chlamydia

<400> 206  
cagaacgcgt ttagaaccgg actttacttc c 31

<210> 207  
<211> 50  
<212> DNA  
<213> Chlamydia

<400> 207  
cagacatatg catcaccatc accatcacga ggcgagctcg atccaagatc 50

<210> 208  
<211> 40  
<212> DNA  
<213> Chlamydia

<400> 208  
cagaggtacc tcagatagca ctctctccta ttaaagtagg 40

<210> 209  
<211> 55  
<212> DNA  
<213> Chlamydia

<400> 209  
cagagctagc atgcatcacc atcaccatca cgttaagatt gagaacttct ctggc 55

<210> 210  
<211> 35  
<212> DNA  
<213> Chlamydia

<400> 210  
cagaggtacc ttagaatgtc atacgagcac cgcag 35

<210> 211  
<211> 36  
<212> DNA

<213> Chlamydia

<400> 211

cagacatatg catcaccatc accatcacgg gtttagc 36

<210> 212

<211> 35

<212> DNA

<213> Chlamydia

<400> 212

cagaggtacc tcagctcctc cagcacactc tcttc 35

<210> 213

<211> 51

<212> DNA

<213> Chlamydia

<400> 213

cagagctagc catcaccatc accatcacgg tgctatttct tgcttacgtg g 51

<210> 214

<211> 38

<212> DNA

<213> Chlamydia

<400> 214

cagaggtact taaaagatca atcgcaatcc agtattcg 38

<210> 215

<211> 48

<212> DNA

<213> Chlamydia

<400> 215

cagaggatcc acatcaccat caccatcacg gactagctag agaggttc 48

<210> 216

<211> 31

<212> DNA

<213> Chlamydia

<400> 216

cagagaattc ctagaatcgc agagcaattt c 31

<210> 217

<211> 7

<212> DNA

<213> Chlamydia

<400> 217

tgcaatc 7

<210> 218

<211> 22

<212> PRT

<213> Chlamydia

<400> 218

Met Ala Ser Met Thr Gly Gly Gln Gln Met Gly Arg Asp Ser Ser Leu  
1 5 10 15

Val Pro Ser Ser Asp Pro  
20

<210> 219  
<211> 51  
<212> DNA  
<213> Chlamydia

<400> 219  
cagaggtacc gcacacccat caccatcaca tgattcctca aggaatttac g 51

<210> 220  
<211> 33  
<212> DNA  
<213> Chlamydia

<400> 220  
cagagcggcc gcttagaacc ggactttact tcc 33

<210> 221  
<211> 24  
<212> PRT  
<213> Chlamydia

<400> 221  
Met Ala Ser Met Thr Gly Gly Gln Gln Asn Gly Arg Asp Ser Ser Leu  
1 5 10 15  
Val Pro His His His His His His  
20

<210> 222  
<211> 46  
<212> DNA  
<213> Chlamydia

<400> 222  
cagagctagc catcaccatc accatcacct ctttgccag gatccc 46

<210> 223  
<211> 30  
<212> DNA  
<213> Chlamydia

<400> 223  
cagaactagt ctagaacctg taagtgtcc 30

<210> 224  
<211> 20  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Made in a lab

<400> 224  
Met Ser Gln Lys Asn Lys Asn Ser Ala Phe Met His Pro Val Asn Ile  
1 5 10 15  
Ser Thr Asp Leu  
20

<210> 225



<211> 20  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Made in a lab

<400> 225  
Lys Asn Ser Ala Phe Met His Pro Val Asn Ile Ser Thr Asp Leu Ala  
1 5 10 15  
Val Ile Val Gly  
20

<210> 226  
<211> 20  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Made in a lab

<400> 226  
His Pro Val Asn Ile Ser Thr Asp Leu Ala Val Ile Val Gly Lys Gly  
1 5 10 15  
Pro Met Pro Arg  
20

<210> 227  
<211> 20  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Made in a lab

<400> 227  
Ser Thr Asp Leu Ala Val Ile Val Gly Lys Gly Pro Met Pro Arg Thr  
1 5 10 15  
Glu Ile Val Lys  
20

<210> 228  
<211> 20  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Made in a lab

<400> 228  
Val Ile Val Gly Lys Gly Pro Met Pro Arg Thr Glu Ile Val Lys Lys  
1 5 10 15  
Val Trp Glu Tyr  
20

<210> 229  
<211> 20  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 229

Gly	Pro	Met	Pro	Arg	Thr	Glu	Ile	Val	Lys	Lys	Val	Trp	Glu	Tyr	Ile
1				5					10					15	
Lys	Lys	His	Asn												
			20												

<210> 230

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 230

Ile	Lys	Lys	His	Asn	Cys	Gln	Asp	Gln	Lys	Asn	Lys	Arg	Asn	Ile	Leu
1				5					10					15	
Pro	Asp	Ala	Asn												
			20												

<210> 231

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 231

Asn	Cys	Gln	Asp	Gln	Lys	Asn	Lys	Arg	Asn	Ile	Leu	Pro	Asp	Ala	Asn
1				5					10					15	
Leu	Ala	Lys	Val												
			20												

<210> 232

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 232

Lys	Asn	Lys	Arg	Asn	Ile	Leu	Pro	Asp	Ala	Asn	Leu	Ala	Lys	Val	Phe
1				5					10					15	
Gly	Ser	Ser	Asp												
			20												

<210> 233

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Made in a lab

<400> 233

Ile	Leu	Pro	Asp	Ala	Asn	Leu	Ala	Lys	Val	Phe	Gly	Ser	Ser	Asp	Pro
1				5					10					15	

Ile Asp Met Phe  
20

<210> 234  
<211> 20  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Made in a lab

<400> 234  
Asn Leu Ala Lys Val Phe Gly Ser Ser Asp Pro Ile Asp Met Phe Gln  
1 5 10 15  
Met Thr Lys Ala  
20

<210> 235  
<211> 22  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Made in a lab

<400> 235  
Phe Gly Ser Ser Asp Pro Ile Asp Met Phe Gln Met Thr Lys Ala Leu  
1 5 10 15  
Ser Lys His Ile Val Lys  
20

<210> 236  
<211> 20  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Made in a lab

<400> 236  
Val Glu Ile Thr Gln Ala Val Pro Lys Tyr Ala Thr Val Gly Ser Pro  
1 5 10 15  
Tyr Pro Val Glu  
20

<210> 237  
<211> 20  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Made in a lab

<400> 237  
Ala Val Pro Lys Tyr Ala Thr Val Gly Ser Pro Tyr Pro Val Glu Ile  
1 5 10 15  
Thr Ala Thr Gly  
20

<210> 238  
<211> 20

<212> PRT  
<213> Artificial Sequence

<220>  
<223> Made in a lab

<400> 238  
Ala Thr Val Gly Ser Pro Tyr Pro Val Glu Ile Thr Ala Thr Gly Lys  
1 5 10 15  
Arg Asp Cys Val  
20

<210> 239  
<211> 20  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Made in a lab

<400> 239  
Pro Tyr Pro Val Glu Ile Thr Ala Thr Gly Lys Arg Asp Cys Val Asp  
1 5 10 15  
Val Ile Ile Thr  
20

<210> 240  
<211> 21  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Made in a lab

<400> 240  
Ile Thr Ala Thr Gly Lys Arg Asp Cys Val Asp Val Ile Ile Thr Gln  
1 5 10 15  
Gln Leu Pro Cys Glu  
20

<210> 241  
<211> 20  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Made in a lab

<400> 241  
Lys Arg Asp Cys Val Asp Val Ile Ile Thr Gln Gln Leu Pro Cys Glu  
1 5 10 15  
Ala Glu Phe Val  
20

<210> 242  
<211> 20  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Made in a lab

<400> 242  
Asp Val Ile Ile Thr Gln Gln Leu Pro Cys Glu Ala Glu Phe Val Arg  
1 5 10 15  
Ser Asp Pro Ala  
20

<210> 243  
<211> 20  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Made in a lab

<400> 243  
Thr Gln Gln Leu Pro Cys Glu Ala Glu Phe Val Arg Ser Asp Pro Ala  
1 5 10 15  
Thr Thr Pro Thr  
20

<210> 244  
<211> 20  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Made in a lab

<400> 244  
Cys Glu Ala Glu Phe Val Arg Ser Asp Pro Ala Thr Thr Pro Thr Ala  
1 5 10 15  
Asp Gly Lys Leu  
20

<210> 245  
<211> 20  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Made in a lab

<400> 245  
Val Arg Ser Asp Pro Ala Thr Thr Pro Thr Ala Asp Gly Lys Leu Val  
1 5 10 15  
Trp Lys Ile Asp  
20

<210> 246  
<211> 20  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Made in a lab

<400> 246  
Ala Thr Thr Pro Thr Ala Asp Gly Lys Leu Val Trp Lys Ile Asp Arg  
1 5 10 15  
Leu Gly Gln Gly

20

<210> 247  
<211> 20  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Made in a lab

<400> 247  
Ala Asp Gly Lys Leu Val Trp Lys Ile Asp Arg Leu Gly Gln Gly Glu  
1 5 10 15  
Lys Ser Lys Ile  
20

<210> 248  
<211> 20  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Made in a lab

<400> 248  
Val Trp Lys Ile Asp Arg Leu Gly Gln Gly Glu Lys Ser Lys Ile Thr  
1 5 10 15  
Val Trp Val Lys  
20

<210> 249  
<211> 20  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Made in a lab

<400> 249  
Arg Leu Gly Gln Gly Glu Lys Ser Lys Ile Thr Val Trp Val Lys Pro  
1 5 10 15  
Leu Lys Glu Gly  
20

<210> 250  
<211> 20  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Made in a lab

<400> 250  
Gly Glu Lys Ser Lys Ile Thr Val Trp Val Lys Pro Leu Lys Glu Gly  
1 5 10 15  
Cys Cys Phe Thr  
20

<210> 251  
<211> 16  
<212> PRT

<213> Artificial Sequence

 $\langle 220 \rangle$ 

<223> Made in a lab

<400> 251

Gly Glu Lys Ser Lys Ile Thr Val Trp Val Lys Pro Leu Lys Glu Gly  
1 5 10 15

$\langle 210 \rangle$  252

<211> 12

<212> PRT

<213> Artificial Sequence

 $\langle 220 \rangle$ 

<223> Made in a lab

<400> 252

Lys Ile Thr Val Trp Val Lys Pro Leu Lys Glu Gly  
1 5 10

<210> 253

<211> 16

&lt;212&gt; PRT

<213> Artificial Sequence

 $\langle 220 \rangle$ 

<223> Made in a lab

<400> 253

Gly Asp Lys Cys Lys Ile Thr Val Trp Val Lys Pro Leu Lys Glu Gly  
1 5 10 15

<210> 254

<211> 20

&lt;212&gt; PRT

<213> Artificial Sequence

 $\langle 220 \rangle$ 

<223> Made in a lab

<400> 254

Thr Glu Tyr Pro Leu Leu Ala Asp Pro Ser Phe Lys Ile Ser Glu Ala  
1 5 10 15  
Phe Gly Val Leu  
20

<210> 255

<211> 20

&lt;212&gt; PRT

<213> Artificial Sequence

 $\langle 220 \rangle$ 

<223> Made in a lab

<400> 255

Leu Ala Asp Pro Ser Phe Lys Ile Ser Glu Ala Phe Gly Val Leu Asn  
1 5 10 15  
Pro Glu Gly Ser  
20

<210> 256  
<211> 20  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Made in a lab

<400> 256  
Phe Lys Ile Ser Glu Ala Phe Gly Val Leu Asn Pro Glu Gly Ser Leu  
1 5 10 15  
Ala Leu Arg Ala  
20

<210> 257  
<211> 20  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Made in a lab

<400> 257  
Ala Phe Gly Val Leu Asn Pro Glu Gly Ser Leu Ala Leu Arg Ala Thr  
1 5 10 15  
Phe Leu Ile Asp  
20

<210> 258  
<211> 20  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Made in a lab

<400> 258  
Asn Pro Glu Gly Ser Leu Ala Leu Arg Ala Thr Phe Leu Ile Asp Lys  
1 5 10 15  
His Gly Val Ile  
20

<210> 259  
<211> 20  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Made in a lab

<400> 259  
Leu Ala Leu Arg Ala Thr Phe Leu Ile Asp Lys His Gly Val Ile Arg  
1 5 10 15  
His Ala Val Ile  
20

<210> 260  
<211> 20  
<212> PRT  
<213> Artificial Sequence



&lt;220&gt;

&lt;223&gt; Made in a lab

&lt;400&gt; 260

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Thr Phe Leu Ile Asp Lys His Gly Val Ile Arg His Ala Val Ile Asn
 1           5           10           15
Asp Leu Pro Leu
                20

```

&lt;210&gt; 261

&lt;211&gt; 20

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Made in a lab

&lt;400&gt; 261

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Lys His Gly Val Ile Arg His Ala Val Ile Asn Asp Leu Pro Leu Gly
 1           5           10           15
Arg Ser Ile Asp
                20

```

&lt;210&gt; 262

&lt;211&gt; 20

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Made in a lab

&lt;400&gt; 262

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Arg His Ala Val Ile Asn Asp Leu Pro Leu Gly Arg Ser Ile Asp Glu
 1           5           10           15
Glu Leu Arg Ile
                20

```

&lt;210&gt; 263

&lt;211&gt; 897

&lt;212&gt; DNA

&lt;213&gt; Chlamydia

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; 604

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 263

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atggcttcta tatgcgagcg tttaggggtct ggtacagggga atgctctaaa agcttttttt 60
acacagccca acaataaaat ggcaagggtg gtaataaaga cgaagggagt ggataagact 120
attaagggtg ccaagtctgc tgccgaattg accgcaaata ttttggaaca agctggaggc 180
gcgggctctt ccgcacacat tacagcttcc caagtgtcca aaggattagg ggatgcgaga 240
actgttgctg ctttagggaa tgcccttaac ggagcgttgc caggaacagt tcaaagtgcg 300
caaagcttct tctctcacat gaaagctgct agtcagaaaa cgcaagaagg ggatgagggg 360
ctcacagcag atctttgtgt gtctcataag cgcagagcgg ctgctgctgt ctgtagcatc 420
atcgaggagaa ttacctacct cgcgacattc ggagctatcc gtccgattct gtttgcacac 480
aaaatgctgg caaaaccggt tctttcttcc caaactaaag caaatatggg atcttctgtt 540
agctatatta tggcggctaa ccatgcagcg tctgtggtgg gtgctggact cgctatcagt 600
gcgnaaagag cagattgcga agcccgtgct gctcgtattg cgagagaaga gtcgttactc 660
gaagtgcgag gagaggaaaa tgcttgcgag aagaaagtcg ctggagagaa agccaagacg 720
ttcacgcgca tcaagtatgc actcctcact atgctcgaga agtttttgga atgcgttgcc 780

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gacgttttca aattgggtgcc gctgcctatt acaatgggta ttcgtgcgat tgtggctgct 840  
 ggaatgtacgt tcacttctgc aattattgga ttgtgcactt tctgcgccag agcataa 897

<210> 264  
 <211> 298  
 <212> PRT  
 <213> Chlamydia

<220>  
 <221> VARIANT  
 <222> 202  
 <223> Xaa = Any Amino Acid

<400> 264  
 Met Ala Ser Ile Cys Gly Arg Leu Gly Ser Gly Thr Gly Asn Ala Leu  
 1 5 10 15  
 Lys Ala Phe Phe Thr Gln Pro Asn Asn Lys Met Ala Arg Val Val Asn  
 20 25 30  
 Lys Thr Lys Gly Val Asp Lys Thr Ile Lys Val Ala Lys Ser Ala Ala  
 35 40 45  
 Glu Leu Thr Ala Asn Ile Leu Glu Gln Ala Gly Gly Ala Gly Ser Ser  
 50 55 60  
 Ala His Ile Thr Ala Ser Gln Val Ser Lys Gly Leu Gly Asp Ala Arg  
 65 70 75 80  
 Thr Val Val Ala Leu Gly Asn Ala Phe Asn Gly Ala Leu Pro Gly Thr  
 85 90 95  
 Val Gln Ser Ala Gln Ser Phe Phe Ser His Met Lys Ala Ala Ser Gln  
 100 105 110  
 Lys Thr Gln Glu Gly Asp Glu Gly Leu Thr Ala Asp Leu Cys Val Ser  
 115 120 125  
 His Lys Arg Arg Ala Ala Ala Val Cys Ser Ile Ile Gly Gly Ile  
 130 135 140  
 Thr Tyr Leu Ala Thr Phe Gly Ala Ile Arg Pro Ile Leu Phe Val Asn  
 145 150 155 160  
 Lys Met Leu Ala Lys Pro Phe Leu Ser Ser Gln Thr Lys Ala Asn Met  
 165 170 175  
 Gly Ser Ser Val Ser Tyr Ile Met Ala Ala Asn His Ala Ala Ser Val  
 180 185 190  
 Val Gly Ala Gly Leu Ala Ile Ser Ala Xaa Arg Ala Asp Cys Glu Ala  
 195 200 205  
 Arg Cys Ala Arg Ile Ala Arg Glu Glu Ser Leu Leu Glu Val Pro Gly  
 210 215 220  
 Glu Glu Asn Ala Cys Glu Lys Lys Val Ala Gly Glu Lys Ala Lys Thr  
 225 230 235 240  
 Phe Thr Arg Ile Lys Tyr Ala Leu Leu Thr Met Leu Glu Lys Phe Leu  
 245 250 255  
 Glu Cys Val Ala Asp Val Phe Lys Leu Val Pro Leu Pro Ile Thr Met  
 260 265 270  
 Gly Ile Arg Ala Ile Val Ala Ala Gly Cys Thr Phe Thr Ser Ala Ile  
 275 280 285  
 Ile Gly Leu Cys Thr Phe Cys Ala Arg Ala  
 290 295

<210> 265  
 <211> 897  
 <212> DNA  
 <213> Chlamydia

<220>  
 <221> misc\_feature

&lt;222&gt; 604

&lt;223&gt; n = A,T,C or G

&lt;400&gt; 265

atggcttcta	tatgcggaag	tttaggggtct	ggtacagggga	atgctctaaa	agcttttttt	60
acacagccca	acaataaaat	ggcaagggta	gtaaataaga	cgaaggggaat	ggataagact	120
attaaggttg	ccaagtctgc	tgccgaattg	accgcaaata	ttttggaaca	agctggaggc	180
gcgggctctt	ccgcacacat	tacagcttcc	caagtgtcca	aaggattagg	ggatgcgaga	240
actgttgctg	ctttagggaa	tgcttttaac	ggagcgttgc	caggaacagt	tcaaagtgcg	300
caaagcttct	tctctcacat	gaaagctgct	agtcagaaaa	cgcaagaagg	ggatgagggg	360
ctcacagcag	atctttgtgt	gtctcataag	cgcagagcgg	ctgctgctgt	ctgtagcatc	420
atcgaggaa	ttacctacct	cgcgacattc	ggagctatcc	gtccgattct	gtttgtcaac	480
aaaatgctgg	caaaaccgtt	tctttcttcc	caaactaaag	caaatatggg	atcttctgtt	540
agctatatta	tggcggctaa	ccatgcagcg	tctgtgggtg	gtgctggact	cgctatcagt	600
gcgnaaagag	cagattgcga	agcccgctgc	gctcgtattg	cgagagaaga	gtcgttactc	660
gaagtgcggg	gagaggaaaa	tgcttgcgag	aagaaagtcg	ctggagagaa	agccaagacg	720
ttcacgcgca	tcaagtatgc	actcctcact	atgctcgaga	agtttttgga	atgcgttgcc	780
gacgttttca	aattgggtgc	gctgcctatt	acaatgggta	ttcgtgcgat	tgtggctgct	840
ggatgtacgt	tcacttctgc	aattattgga	ttgtgcactt	tctgcgccag	agcataa	897

&lt;210&gt; 266

&lt;211&gt; 298

&lt;212&gt; PRT

&lt;213&gt; Chlamydia

&lt;220&gt;

&lt;221&gt; VARIANT

&lt;222&gt; 202

&lt;223&gt; Xaa = Any Amino Acid

&lt;400&gt; 266

Met	Ala	Ser	Ile	Cys	Gly	Arg	Leu	Gly	Ser	Gly	Thr	Gly	Asn	Ala	Leu
1				5					10					15	
Lys	Ala	Phe	Phe	Thr	Gln	Pro	Asn	Asn	Lys	Met	Ala	Arg	Val	Val	Asn
			20					25					30		
Lys	Thr	Lys	Gly	Met	Asp	Lys	Thr	Ile	Lys	Val	Ala	Lys	Ser	Ala	Ala
		35					40					45			
Glu	Leu	Thr	Ala	Asn	Ile	Leu	Glu	Gln	Ala	Gly	Gly	Ala	Gly	Ser	Ser
	50				55						60				
Ala	His	Ile	Thr	Ala	Ser	Gln	Val	Ser	Lys	Gly	Leu	Gly	Asp	Ala	Arg
65					70				75						80
Thr	Val	Val	Ala	Leu	Gly	Asn	Ala	Phe	Asn	Gly	Ala	Leu	Pro	Gly	Thr
				85					90					95	
Val	Gln	Ser	Ala	Gln	Ser	Phe	Phe	Ser	His	Met	Lys	Ala	Ala	Ser	Gln
			100					105					110		
Lys	Thr	Gln	Glu	Gly	Asp	Glu	Gly	Leu	Thr	Ala	Asp	Leu	Cys	Val	Ser
		115				120						125			
His	Lys	Arg	Arg	Ala	Ala	Ala	Ala	Val	Cys	Ser	Ile	Ile	Gly	Gly	Ile
	130					135					140				
Thr	Tyr	Leu	Ala	Thr	Phe	Gly	Ala	Ile	Arg	Pro	Ile	Leu	Phe	Val	Asn
145					150				155						160
Lys	Met	Leu	Ala	Lys	Pro	Phe	Leu	Ser	Ser	Gln	Thr	Lys	Ala	Asn	Met
				165				170						175	
Gly	Ser	Ser	Val	Ser	Tyr	Ile	Met	Ala	Ala	Asn	His	Ala	Ala	Ser	Val
			180				185						190		
Val	Gly	Ala	Gly	Leu	Ala	Ile	Ser	Ala	Xaa	Arg	Ala	Asp	Cys	Glu	Ala
		195					200					205			
Arg	Cys	Ala	Arg	Ile	Ala	Arg	Glu	Glu	Ser	Leu	Leu	Glu	Val	Pro	Gly
	210					215					220				
Glu	Glu	Asn	Ala	Cys	Glu	Lys	Lys	Val	Ala	Gly	Glu	Lys	Ala	Lys	Thr
225					230					235					240

Phe	Thr	Arg	Ile	Lys	Tyr	Ala	Leu	Leu	Thr	Met	Leu	Glu	Lys	Phe	Leu
				245					250					255	
Glu	Cys	Val	Ala	Asp	Val	Phe	Lys	Leu	Val	Pro	Leu	Pro	Ile	Thr	Met
			260					265					270		
Gly	Ile	Arg	Ala	Ile	Val	Ala	Ala	Gly	Cys	Thr	Phe	Thr	Ser	Ala	Ile
		275					280					285			
Ile	Gly	Leu	Cys	Thr	Phe	Cys	Ala	Arg	Ala						
	290					295									

<210> 267  
<211> 680  
<212> DNA  
<213> Chlamydia

<400>	267						
tctatatcca	tattgatagg	aaaaaacgtc	gcagaaagat	tttagctatg	acgtttatcc		60
gagctttagg	atattcaaca	gatgcagata	ttattgaaga	gttcctttct	gtagaggagc		120
gttccttacg	ttcagagaag	gattttgtcg	cgttagttgg	taaagtttta	gctgataacg		180
tagttgatgc	ggattcttca	ttagtttacg	ggaaagctgg	agagaagcta	agtactgcta		240
tgtctaaacg	catcttagat	acgggagtc	aatccttgaa	gattgctggt	ggcgcatag		300
aaaatcaccc	aattattaag	atgctcgcaa	aagatcctac	ggattcttac	gaagctgctc		360
ttaaagattt	ttatcgcaga	ttacgaccag	gagagcctgc	aacttttagct	aatgctcgat		420
ccacaattat	gcgtttattc	ttcgatgcta	aacgttataa	tttaggccgc	gttgacggt		480
ataaattaaa	taaaaaatta	ggcttcccat	tagacgacga	aacattatct	caagtgactt		540
tgagaaaaa	agatgttatc	ggcgcggtga	aatatttgat	tcgtttgcga	atgggcgatg		600
agaagacatc	tatcgatgat	attgaccatt	tggcaaaccg	acgagttcgc	tctgttgag		660
aactaattca	gaatcactgt						680

<210> 268  
<211> 359  
<212> DNA  
<213> Chlamydia

<400>	268						
cttatgttct	ggagaatggt	gcaacaacat	attaatcgaa	ccagctcctc	ctagtaacat		60
agaaaccaag	cccttttgag	aaaaaacctg	tacttcgcat	cctttagcca	tttgttgaat		120
agctcctaac	aaagagctaa	ttttttcctc	ttccttgttt	ttctgaggcg	ctgtggactc		180
taaatatagc	aagtgtcttt	ggaacacctc	atcaacaatc	gcttgctcta	gattaggtat		240
agagactgtc	tctccatcaa	ttaaattggag	tttcaaahta	atatccctct	ccgtccctcc		300
atcacagaac	tctatgaaag	ctatctgatt	ccatcgagca	gaaatgtatg	gggaaatac		359

```
<210> 269
<211> 124
<212> DNA
<213> Chlamydia
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```
<400> 269
gatcgaatca attgagggag ctcattaaca agaatagctg cagtttcttt gcgttcttct      60
ggaataacaa gaaataggta atcggtagca ttgatagaac gaacacgaca aatcgcagaa      120
ggtt                                     124
```

```
<210> 270
<211> 219
<212> DNA
<213> Chlamydia
```

<400>	270						
gatcctggtt	ggcctagtaa	taatacgttg	gatttcccat	aactcacttg	tttatcctgc		60
ataagagcac	ggatagcgtt	atagtggta	tagacggcaa	ccgaaatcgt	ttttttcgcg		120
cgctctttgtc	caatgacata	agagtcgat	tggcgtttga	tttctttagg	ggttaacact		180
ctcgaacttg	ttggagagct	tgtggaagat	gttcgcgctc				219

<210> 271  
 <211> 511  
 <212> DNA  
 <213> Chlamydia

<220>  
 <221> misc\_feature  
 <222> 447  
 <223> n = A,T,C or G

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<400> 271
ggatccgaat tcggcacgag gagaaaatat aggaggttcc akcatcggaa gatctaatag      60
acaaagaggt tttggcatag atggctcctc cttgtacgtt caacgatgat tgggagggat      120
tgttatcgat agcttggttc ccagagaact gacaagtccc gctacattga gagaatgtaa      180
cctgttctcc atagatagct cctcctacta cacctgaata agttggtgtt gctggagatg      240
atggtgcggc tgctgcggct gcttgtaggg aagcagcagc tgcagcaggt gctgaagctg      300
ttggttgcgac tcctgtggat gaggagtttg ctttgttggt cgagaaagag aagcctgatt      360
tcagattaga aatattttaca gtttttagcat gtaagcctcc accttctttc ccaacaagggt      420
tctctgttac agataaggag actagangca tctagtttta aagatttttt acagcagata      480
cctccaccta tctctgtagc ggagttctca g                                     511
```

<210> 272  
 <211> 598  
 <212> DNA  
 <213> Chlamydia

```
<400> 272
ctcttcctct cctcaatcta gttctggagc aactacagtc tccgactcag gagactctag      60
ctctggctca aactcggata cctcaaaaac agttccagtc acagctaaag gcggtgggct      120
ttatactgat aagaatcttt cgattactaa catcacagga attatcgaaa ttgcaaataa      180
caaagcgaca gatgttggag gtggtgctta cgtaaaagga acccttactt gtaaaaaactc      240
tcaccgtcta caatttttga aaaactcttc cgataaaciaa ggtggaggaa tctacggaga      300
agacaacatc accctatcta atttgacagg gaagactcta ttccaagaga atactgccaa      360
aaaagagggc ggtggactct tcataaaagg tacagataaa gctcttacia tgacaggact      420
ggatagtttc tgtttaatta ataacacatc agaaaaacat ggtggtggga gcctttgtta      480
ccaaagaaat ctctcagact tacacctctt gatgtggaaa caattccagg aatcacgcct      540
gtacatggtg aaacagtcac tactggcaat aaatctacag gaggtaatgg tggagggc      598
```

<210> 273  
 <211> 126  
 <212> DNA  
 <213> Chlamydia

```
<400> 273
ggatccgaat tcggcacgag atgagcctta tagtttaaca aaagcttctc acatttccttc      60
gatagctttt tattagccgt ttttagcatc ctaatgagat ctctctggtc gtaacaaata      120
cgagag                                     126
```

<210> 274  
 <211> 264  
 <212> DNA  
 <213> Chlamydia

```
<400> 274
ggatccgaat tcggcacgag ctctttttaa tcttaattac aaaaagacaa attaattcaa      60
tttttcaaaa aagaatttaa acattaattg ttgtaaaaaa acaatattta ttctaaaata      120
ataaccatag ttacggggga atctctttca tgggtttatt tagagctcat caacctaggc      180
atacgcctaa aacatttcct ttgaaagttc accattcggt ctccgataag catcctcaaa      240
ttgctaaagc tatgtggatt acgg                                     264
```

<210> 275  
 <211> 359  
 <212> DNA  
 <213> Chlamydia

<400> 275  
 ggatccgaat tcggcacgag ataaaacctg aaccacaaca aagatctaaa acttcttgat 60  
 tttcagctgc aaattctttt agataaatat caaccatttc ttcagtttca tatcttggaa 120  
 ttaaaacttg ttctcttaaa ttaattctag tatttaagta ttcaacatag cccattatta 180  
 attgaattgg ataattttgc cttaataatt cacattcttt ttcagtaatt ttaggttcta 240  
 aaccgtaccg ctttttttct aaaattaatg tttcttcatt attcatttta taagccactt 300  
 tcctttattt tttgattttg ttcttctgtt agtaatgctt caataatagt taataattt 359

<210> 276  
 <211> 357  
 <212> DNA  
 <213> Chlamydia

<400> 276  
 aaaacaattg atataatttt ttttttcata acttccagac tcctttctag aaaagtcttt 60  
 atgggtagta gtgactctaa cgttttttat tattaagacg atccccggag atccttttta 120  
 tgatgaaaac ggaaacatcc tttcgccaga aacttttagca ctattaaaga atcgttacgg 180  
 gttagataag cctttattca cccagtatct tatctatttg aaatgtctgc taacactaga 240  
 tttcggggaa tctcttatct acaaagatcg aaatctcagc attattgctg ccgctcttcc 300  
 atcttccgct attcttggac ttgaaagctt gtgtttactc gtgccgaatt cggatcc 357

<210> 277  
 <211> 505  
 <212> DNA  
 <213> Chlamydia

<400> 277  
 ggatccgaat tcggcacgag ctctgtgccga ttgcttgctt cagtcacccc atcggtatag 60  
 agcactaaaa gagactcctc ttcaagaacg agagtgtgag caggttgagg aggaacttca 120  
 ggtaaaaatc ctaaggccat accaggatgc gacaggaaaag agatatctcc attaggagct 180  
 cggagacacg ctgggttggt gccacaagaa tagtattcta gttctcgtgt tgcgtaatga 240  
 taacaataaa tgcatagtgt tacaacatc ccagattcag ctgtctgttg atagaagaga 300  
 gcagctgttt gttgaacggc ttcttgaata gaggagagct cactcaaaaa ggtatgtaac 360  
 atgtttttca ggaataagga gtaggcgcac gcattgactc ctttcccggg agcatcagca 420  
 acgattagaa agagtttagc ttggggacct tcgcctataa caaagataic aaagaaatct 480  
 cctcctaccg taactgcagg aatat 505

<210> 278  
 <211> 407  
 <212> DNA  
 <213> Chlamydia

<400> 278  
 ggatccgaat tcggcacgag aactactgag caaattgggt atccaacttc ctctttacga 60  
 aagaaaaaca gaaggcattc tccataccaa gatttggtgc atcgacaata aaactccaat 120  
 ctttggtctc gtaactgga gcggtgctgg tatgattaaa aactttgaag acctattcat 180  
 ccttcgcccc attacagaga cacagcttca ggctttatg gacgtctggg ctcttctaga 240  
 aacaaatagc tcctatctgt cccagagag cggtgcttac gccctactc cttcaagtag 300  
 acctactcaa caagatacag attctgatga cgaacaaccg agtaccagcc agcaagctat 360  
 ccgtatgaga aaataggatt agggaaacaa aacgacagca aaccaca 407

<210> 279  
 <211> 351  
 <212> DNA  
 <213> Chlamydia

<400> 279  
 ctctgtgccgc ttacaggagc cttgtatcct ttaaaataga gtttttctta tgaccccatg 60  
 tggcgatagg ccgggtctag cgccgatagt agaaatatcg gttgggtttt gtccttgagg 120  
 ggatcgtata ctttttcaaa gtatgggtccc cgtatcgatt atctggaggc tcttatgtct 180  
 ttttttcata ctgaaaaata taagccttct ctcagaggac tcttgtgttt agcaggctgt 240  
 ttcttaaatga acagctgttc ctctagtcga ggaaatcaac ccgctgatga gagcatctat 300  
 gtcttgtcta tgaatcgcat gatttgtgat tctcgtgccg aattcggatc c 351

<210> 280

<211> 522

<212> DNA

<213> Chlamydia

<400> 280  
 ggatccgaat tcggcacgag cagaggaaaa aggcgatact cctcttgaag atcgtttcac 60  
 agaagatctt tccgaagtct ctggagaaga ttttcgagga ttgaaaaatt cgttcgatga 120  
 tgattcttct tctgacgaaa ttctcgatgc gtcacaagt aaattttctg atcccacaat 180  
 aaaggatcta gctcttgatt atctaattca aatagctccc tctgatggga aacttaagtc 240  
 cgctctcatt caggcaaagc atcaactgat gagccagaat cctcaggcga ttgttgagg 300  
 acgcaatgtt ctgttagctt cagaaacctt tgcttccaga gcaaatacat ctccctcatc 360  
 gcttcgctcc ttatatctcc aagtaacctc atccccctct aattgcgcta atttacatca 420  
 aatgcttgct tcttactcgc catcagagaa aaccgctgtt atggagtctt tagtgaatgg 480  
 catggttagca gatttaaaat cggagggccc ttccattcct cc 522

<210> 281

<211> 577

<212> DNA

<213> Chlamydia

<400> 281  
 ggatccgaat tcggcacgag atgcttctat tacaattggt ttggatgcgg aaaaagctta 60  
 ccagcttatt ctgaaaaagt tgggagatca aattcttggt ggaattgctg atactattgt 120  
 tgatagtaca gtccaagata ttttagacaa aatcacaaca gacccttctc taggtttgtt 180  
 gaaagctttt aacaactttc caatcactaa taaaattcaa tgcaacgggt tattcactcc 240  
 caggaaacatt gaaactttat taggaggaac tgaaatagga aaattcacag tcacacccaa 300  
 aagctctggg agcatgttct tagtctcagc agatattatt gcatcaagaa tggaaggcgg 360  
 cggtgttcta gctttggtac gagaagggtga ttctaagccc tacgcgatta gttatggata 420  
 ctcacaggc gttcctaatt tatgtagtct aagaaccaga attattaata caggattgac 480  
 tccgacaacg tattcattac gtgtaggcgg tttagaaagc ggtgtggtat gggttaatgc 540  
 cctttctaatt ggcaatgata ttttaggaat aacaaat 577

<210> 282

<211> 607

<212> DNA

<213> Chlamydia

<400> 282  
 actmatcttc cccgggctcg agtgccggccg caagcttgct gacggagctc gatacaaaaa 60  
 tgtgtgcgtg tgaaccgctt ctcaaaaagc ttgtcttaaa agatattgtc tcgcttccgg 120  
 attagttaca tgttttaaaa ttgctagaac aatattattc ccaaccaagc tctctgcggt 180  
 gctgaaaaaa cctaaattca aaagaatgac tcgccgctca tcttcagaaa gacgatccga 240  
 cttccataat tcgatgtctt tccccatggg gatctctgta gggagccagt tatttgcgca 300  
 gccattcaaa taatgttccc aagcccattt gtacttaata ggaacaagt gggtgacatc 360  
 gacctgggtg cagttcacta gacgcttgct attttagatta acgctgttct gttttccatc 420  
 taaaaatatct gcttgcataa gaaccgttaa ttttattggt aatttatatg attaatct 480  
 gacatgcttc acacccttct tccaaagaac agacaggtgc tttcttcgct ctttcaacaa 540  
 taattcctgc cgaagcagac ttattcttca tccaacgagg ctgaattcct ctcttattaa 600  
 tatctac 607

<210> 283

<211> 1077

&lt;212&gt; DNA

&lt;213&gt; Chlamydia

&lt;400&gt; 283

ggatccgaat	tcggcacgag	aagttaacga	tgacgatttg	ttcctttggt	agagaaggag	60
caatcgaaac	taaatgtgcg	agagcatgtg	aagactccaa	tgcaggaata	atcccctcat	120
ttctagtaag	caggaaaaaa	gctcgtaacg	cctcttcac	ggtggctaata	gtataaaagg	180
ctcgtcctga	ctcatgcatt	tgggcatgat	ctggcccaac	tgaaggataa	tctaataccag	240
cggaaatgga	gtgagtttgt	aatacttgtc	catcgtcac	ttgaagaaga	tacgaataaa	300
atccgtggaa	tactccaggt	cgccctgttg	caaaacgtgc	tgcatgtttt	cctgaagaaa	360
tgcccagttcc	tcccccttcc	actccaatta	attggacttt	tggattcggg	ataaaatgat	420
ggaaaaatcc	aatagcgttg	gagccacctc	cgatacatgc	aatcagaata	tcaggatctc	480
ttcctgcaac	tgcattggatt	tgctctttca	cttcagcgct	tataacagac	tgaaaaaatc	540
gaacgatata	gggataaggt	aaaggtccta	aggccgatcc	taagcaatag	tgagtaaagt	600
agtgtgttgt	tgcccaatct	tgtagagctt	gattaactgc	atctttgagt	ccacaagatc	660
cttttgttac	agaaacgact	tcagcaccta	aaaagcgcat	tttctctaca	tttggtttct	720
gtcgttccac	atcttttgc	cccatgtata	ctacacaatc	taatcctaga	taagcacacg	780
ctgttgctgt	tgctactcca	tggtgtcccg	cacctgttcc	agctacaaca	cgtgttttcc	840
caagatattt	agcaagcaaa	cactgaccaa	gagcattatt	cagtttatgt	gctcctgtat	900
gcaaaagatc	ttcgcgttta	agaaatactc	tagggccatc	aatagctcga	gcaaaattct	960
taacttcagt	cagaggagtt	tgtctccccg	catagttttt	caaaatacaa	tctagttcag	1020
ataaaaaact	ttgctgagtt	ttgagaatct	cccattccgc	ttttagattc	tgtatag	1077

&lt;210&gt; 284

&lt;211&gt; 407

&lt;212&gt; DNA

&lt;213&gt; Chlamydia

&lt;400&gt; 284

ggatccgaat	tcggcacgag	aactactgag	caaattgggt	atccaacttc	ctctttacga	60
aagaaaaaca	gaaggcattc	tccatacca	gatttgttgc	atcgacaata	aaactccaat	120
ctttggctct	gctaactgga	gcggtgctgg	tatgattaaa	aactttgaag	acctattcat	180
ccttcgcccc	attacagaga	cacagcttca	ggcctttatg	gacgtctggg	ctcttctaga	240
aacaaatagc	tcctatctgt	cccagagag	cgtgcttacg	gcccctactc	cttcaagtag	300
acctactcaa	caagatacag	attctgatga	cgaacaaccg	agtaccagcc	agcaagctat	360
ccgtatgaga	aaataggatt	agggaaacaa	aacgacagca	aaccaca		407

&lt;210&gt; 285

&lt;211&gt; 802

&lt;212&gt; DNA

&lt;213&gt; Chlamydia

&lt;400&gt; 285

ggatccgaat	tcggcacgag	ttagcttaat	gtctttgtca	tctctaccta	catttgcagc	60
taattctaca	ggcacaattg	gaatcgttaa	tttacgtcgc	tgcctagaag	agtctgctct	120
tgggaaaaaa	gaatctgctg	aattcgaaaa	gatgaaaaac	caattctcta	acagcatggg	180
gaagatggag	gaagaactgt	cttctatcta	ttccaagctc	caagacgacg	attacatgga	240
aggtctatcc	gagaccgcag	ctgccgaatt	aagaaaaaaa	ttcgaagatc	tatctgcaga	300
atacaacaca	gtcaaggggc	agtattacca	aattattaaac	caaagtaatc	tcaagcgcat	360
gcaaaagatt	atggaagaag	tgaaaaaagc	ttctgaaact	gtgcgtattc	aagaaggctt	420
gtcagtcctt	cttaacgaag	atattgtctt	atctatcgat	agttcggcag	ataaaaccga	480
tgctgttatt	aaagttcttg	atgattcttt	tcaaaataat	taacatgcga	agctagccga	540
ggagtgccgt	atgtctcaat	ccacttatcc	tcttgaacaa	ttagctgatt	ttttgaaagt	600
cgagtttcaa	ggaaatggag	ctactcttct	ttccggagtt	gaagagatcg	aggaagcaaa	660
aacggcacac	atcacattct	tagataatga	aaaatatgct	aaacatttaa	aatcatcgga	720
agctggcgct	atcatcatat	ctcgaacaca	gtttcaaaaa	tatcgagact	tgaataaaaa	780
ctttcttata	acttctgagt	ct				802

&lt;210&gt; 286

&lt;211&gt; 588

&lt;212&gt; DNA



&lt;213&gt; Chlamydia

&lt;400&gt; 286

ggatccgaat	tcggcacgag	gcaatatttta	ctcccaacat	tacggttcca	aataagcgat	60
aaggtcttct	aataaggaag	ttaatgtaag	aggctttttt	attgcttttc	gtaaggtagt	120
attgcaaccg	cacgcgattg	aatgatacgc	aagccatttc	catcatggaa	aagaaccctt	180
ggacaaaaat	acaaaggagg	ttcactccta	accagaaaaa	gggagagtta	gtttccatgg	240
gttttcctta	tatacaccgg	tttcacacaa	ttaggagccg	cgtctagtat	ttggaataca	300
aattgtcccc	aagcgaattt	tgttcctggt	tcagggattt	ctcctaattg	ttctgtcagc	360
catccgccta	tggtaacgca	attagctgta	gtaggaagat	caactccaaa	caggtcatag	420
aaatcagaaa	gctcataggt	gcctgcagca	ataacaacat	tcttgtctga	gtgagcgaat	480
tgtttaaaag	atgggcgatt	atgagctacc	tcatacagaga	ctatttttaa	tagatcattt	540
tgggtaatca	atccttctat	agacccatat	tcataaatga	taatctcg		588

&lt;210&gt; 287

&lt;211&gt; 489

&lt;212&gt; DNA

&lt;213&gt; Chlamydia

&lt;220&gt;

&lt;221&gt; misc\_feature

&lt;222&gt; 488

&lt;223&gt; n = A, T, C or G

&lt;400&gt; 287

agtgcctatt	gttttgcagg	ctttgtctga	tgatagcgat	accgtacgtg	agattgctgt	60
acaagtagct	gttatgtatg	gttctagttg	cttactgcgc	gccgtgggcg	atttagcgaa	120
aaatgattct	tctattcaag	tacgcatac	tgcttatcgt	gctgcagccg	tggtggagat	180
acaagatctt	gtgcctcatt	tacgagttgt	agtccaaaat	acacaattag	atggaacgga	240
aagaagagaa	gcttggagat	ctttatgtgt	tcttactcgg	cctcatagtg	gtgtattaac	300
tggcatagat	caagctttta	tgacctgtga	gatgttaaa	gaatatcctg	aaaagtgtac	360
ggaagaacag	attcgtagat	tattggctgc	agatcatcca	gaagtgcagg	tagctacttt	420
acagatcatt	ctgagaggag	gtagagtatt	cgggtcatct	tctataatgg	aatcggttct	480
cgtgccgnt						489

&lt;210&gt; 288

&lt;211&gt; 191

&lt;212&gt; DNA

&lt;213&gt; Chlamydia

&lt;400&gt; 288

ggatccgaat	tcaggatatg	ctgttggggt	atcaataaaa	agggttttgc	catttttttaa	60
gacgactttg	tagataacgc	taggagctgt	agcaataata	tcgagatcaa	attctctaga	120
gattctctca	aagatgattt	ctaagtgcag	cagtcctaaa	aatccacagc	ggaacccaaa	180
tccgagagag	t					191

&lt;210&gt; 289

&lt;211&gt; 515

&lt;212&gt; DNA

&lt;213&gt; Chlamydia

&lt;400&gt; 289

ggatccgaat	tcggcacgag	gagcgacgtg	aaatagtggg	atcttcccgt	attcttatta	60
cttctgcgtt	gccttacgca	aatggctcct	tgcatttttg	acataattacc	ggtgcttatt	120
tgcttgcaga	tgtttatgcg	cgtttttcaga	gactacaagg	caaagagggt	ttgtatatatt	180
gtggttctga	tgaatacggg	atcgcaatta	cccttaaatgc	agagttggca	ggcatggggg	240
atcaagaata	tgctgacatg	tatcataagc	ttcataaaaga	taccttcaag	aaattgggaa	300
tttctgtaga	tttcttttcc	agaactacga	acgcttatca	tcctgctatt	gtgcaagatt	360
tctatcgaaa	cttgcaggaa	cgcggaactgg	tagagaatca	ggtgaccgaa	cagctgtatt	420
ctgaggaaga	aggggaagttt	ttagcggacc	gttatgttgt	aggtacttgt	cccaagtgtg	480
ggtttgatcg	agctcgagga	gatgagtgtc	agcag			515

<210> 290  
 <211> 522  
 <212> DNA  
 <213> Chlamydia

<400> 290  
 ggatccgaat tcggcacgag ggaggaatgg aagggccctc cgattktama totgctacca 60  
 tgccattcac tagaaactcc ataacagcgg ttttctctga tggcgagtaa gaagcaagca 120  
 tttgatgtaa attagcgcaa ttagaggggg atgaggttac ttggaaatat aaggagcgaa 180  
 gcgatgaagg agatgtattt gctctggaag caaaggtttc tgaagctaac agaacattgc 240  
 gtcctccaac aatcgccctga ggattctggc tcatcagttg atgctttgcc tgaatgagag 300  
 cggacttaag tttcccatca gagggagcta tttgaattag ataatacaaga gctagatcct 360  
 ttattgtggg atcagaaaaa ttacttgtga gcgcacgcag aatttcgtca gaagaagaat 420  
 catcatcgaa cgaatttttc aatcctcgaa aatcttctcc agagacttcg gaaagatcct 480  
 ctgtgaaacg atcttcaaga ggagtatcgc ctttttccyc tg 522

<210> 291  
 <211> 1002  
 <212> DNA  
 <213> Chlamydia

<400> 291  
 atggcgacta acgcaattag atcggcagga agtgcagcaa gtaagatgct gctgccagtt 60  
 gccaaagaac cagcggctgt cagctccttt gctcagaaag ggatttattg tattcaacaa 120  
 tttttttacaa accctgggaa taagttagca aagtttgtag gggcaacaaa aagtttagat 180  
 aaatgcttta agctaagtaa ggcggtttct gactgtgtcg taggatcgct ggaagaggcg 240  
 ggatgcacag gggacgcatt gacctccgcg agaaacgccc agggatatgtt aaaaacaact 300  
 cgagaagttg ttgccttagc taatgtgctc aatggagctg ttccatctat cgtttaactcg 360  
 actcagaggt gttaccaata cacacgtcaa gccttcgagt taggaagcaa gacaaaagaa 420  
 agaaaaacgc ctggggagta tagtaaaatg ctattaactc gaggtgatta cctattggca 480  
 gcttcacagg aagcttgtag ggcagtcggt gcaacgactt actcagcgac attcggtggt 540  
 ttacgtccgt taatgttaat caataaactc acagcaaaac cattcttaga caaagcgact 600  
 gtaggcaatt ttggcacggc tgttgctgga attatgacca ttaatcatat ggcaggagtt 660  
 gctggtgctg ttggcggaat cgcattagaa caaaagctgt tcaaacgtgc gaaggaatcc 720  
 ctatacaatg agagatgtgc cttagaaaac caacaatctc agttgagtgg ggacgtgatt 780  
 ctaagcgcgg aaagggcatt acgtaaagaa cacttgcta ctctaaaaag aaatgtttta 840  
 actcttcttg aaaaagcttt agagttggtg gtggatggag tcaaactcat tcctttaccg 900  
 attacagtgg cttgctccgc tgcaatttct ggagccttga cggcagcatc cgcaggaatt 960  
 ggcttatata gcatatggca gaaaacaaag tctggcaaat aa 1002

<210> 292  
 <211> 333  
 <212> PRT  
 <213> Chlamydia

<400> 292  
 Met Ala Thr Asn Ala Ile Arg Ser Ala Gly Ser Ala Ala Ser Lys Met  
 1 5 10 15  
 Leu Leu Pro Val Ala Lys Glu Pro Ala Ala Val Ser Ser Phe Ala Gln  
 20 25 30  
 Lys Gly Ile Tyr Cys Ile Gln Gln Phe Phe Thr Asn Pro Gly Asn Lys  
 35 40 45  
 Leu Ala Lys Phe Val Gly Ala Thr Lys Ser Leu Asp Lys Cys Phe Lys  
 50 55 60  
 Leu Ser Lys Ala Val Ser Asp Cys Val Val Gly Ser Leu Glu Glu Ala  
 65 70 75 80  
 Gly Cys Thr Gly Asp Ala Leu Thr Ser Ala Arg Asn Ala Gln Gly Met  
 85 90 95  
 Leu Lys Thr Thr Arg Glu Val Val Ala Leu Ala Asn Val Leu Asn Gly  
 100 105 110

Ala Val Pro Ser Ile Val Asn Ser Thr Gln Arg Cys Tyr Gln Tyr Thr  
           115                  120          125  
 Arg Gln Ala Phe Glu Leu Gly Ser Lys Thr Lys Glu Arg Lys Thr Pro  
       130                  135          140  
 Gly Glu Tyr Ser Lys Met Leu Leu Thr Arg Gly Asp Tyr Leu Leu Ala  
 145                  150          155          160  
 Ala Ser Arg Glu Ala Cys Thr Ala Val Gly Ala Thr Thr Tyr Ser Ala  
           165                  170          175  
 Thr Phe Gly Val Leu Arg Pro Leu Met Leu Ile Asn Lys Leu Thr Ala  
           180                  185          190  
 Lys Pro Phe Leu Asp Lys Ala Thr Val Gly Asn Phe Gly Thr Ala Val  
           195                  200          205  
 Ala Gly Ile Met Thr Ile Asn His Met Ala Gly Val Ala Gly Ala Val  
           210                  215          220  
 Gly Gly Ile Ala Leu Glu Gln Lys Leu Phe Lys Arg Ala Lys Glu Ser  
 225                  230          235          240  
 Leu Tyr Asn Glu Arg Cys Ala Leu Glu Asn Gln Gln Ser Gln Leu Ser  
           245                  250          255  
 Gly Asp Val Ile Leu Ser Ala Glu Arg Ala Leu Arg Lys Glu His Val  
           260                  265          270  
 Ala Thr Leu Lys Arg Asn Val Leu Thr Leu Leu Glu Lys Ala Leu Glu  
           275                  280          285  
 Leu Val Val Asp Gly Val Lys Leu Ile Pro Leu Pro Ile Thr Val Ala  
           290                  295          300  
 Cys Ser Ala Ala Ile Ser Gly Ala Leu Thr Ala Ala Ser Ala Gly Ile  
 305                  310          315          320  
 Gly Leu Tyr Ser Ile Trp Gln Lys Thr Lys Ser Gly Lys  
           325                  330

&lt;210&gt; 293

&lt;211&gt; 7

&lt;212&gt; DNA

&lt;213&gt; Chlamydia

&lt;400&gt; 293

tgcaatc

&lt;210&gt; 294

&lt;211&gt; 196

&lt;212&gt; PRT

&lt;213&gt; Chlamydia

&lt;400&gt; 294

Thr Met Gly Ser Leu Val Gly Arg Gln Ala Pro Asp Phe Ser Gly Lys  
                   5                  10          15

Ala Val Val Cys Gly Glu Glu Lys Glu Ile Ser Leu Ala Asp Phe Arg  
           20                  25          30

Gly Lys Tyr Val Val Leu Phe Phe Tyr Pro Lys Asp Phe Thr Tyr Val  
           35                  40          45

Cys Pro Thr Glu Leu His Ala Phe Gln Asp Arg Leu Val Asp Phe Glu  
           50                  55          60

Glu His Gly Ala Val Val Leu Gly Cys Ser Val Asp Asp Ile Glu Thr  
           65                  70          75          80

His Ser Arg Trp Leu Thr Val Ala Arg Asp Ala Gly Gly Ile Glu Gly  
           85                  90          95

Thr Glu Tyr Pro Leu Leu Ala Asp Pro Ser Phe Lys Ile Ser Glu Ala  
 100 105 110  
 Phe Gly Val Leu Asn Pro Glu Gly Ser Leu Ala Leu Arg Ala Thr Phe  
 115 120 125  
 Leu Ile Asp Lys His Gly Val Ile Arg His Ala Val Ile Asn Asp Leu  
 130 135 140  
 Pro Leu Gly Arg Ser Ile Asp Glu Glu Leu Arg Ile Leu Asp Ser Leu  
 145 150 155 160  
 Ile Phe Phe Glu Asn His Gly Met Val Cys Pro Ala Asn Trp Arg Ser  
 165 170 175  
 Gly Glu Arg Gly Met Val Pro Ser Glu Glu Gly Leu Lys Glu Tyr Phe  
 180 185 190  
 Gln Thr Met Asp  
 195

<210> 295  
 <211> 181  
 <212> PRT  
 <213> Chlamydia

<400> 295  
 Lys Gly Gly Lys Met Ser Thr Thr Ile Ser Gly Asp Ala Ser Ser Leu  
 5 10 15  
 Pro Leu Pro Thr Ala Ser Cys Val Glu Thr Lys Ser Thr Ser Ser Ser  
 20 25 30  
 Thr Lys Gly Asn Thr Cys Ser Lys Ile Leu Asp Ile Ala Leu Ala Ile  
 35 40 45  
 Val Gly Ala Leu Val Val Val Ala Gly Val Leu Ala Leu Val Leu Cys  
 50 55 60  
 Ala Ser Asn Val Ile Phe Thr Val Ile Gly Ile Pro Ala Leu Ile Ile  
 65 70 75 80  
 Gly Ser Ala Cys Val Gly Ala Gly Ile Ser Arg Leu Met Tyr Arg Ser  
 85 90 95  
 Ser Tyr Ala Ser Leu Glu Ala Lys Asn Val Leu Ala Glu Gln Arg Leu  
 100 105 110  
 Arg Asn Leu Ser Glu Glu Lys Asp Ala Leu Ala Ser Val Ser Phe Ile  
 115 120 125  
 Asn Lys Met Phe Leu Arg Gly Leu Thr Asp Asp Leu Gln Ala Leu Glu  
 130 135 140  
 Ala Lys Val Met Glu Phe Glu Ile Asp Cys Leu Asp Arg Leu Glu Lys  
 145 150 155 160  
 Asn Glu Gln Ala Leu Leu Ser Asp Val Arg Leu Val Leu Ser Ser Tyr  
 165 170 175

Thr Arg Trp Leu Asp  
180

<210> 296  
<211> 124  
<212> PRT  
<213> Chlamydia

<400> 296  
Ile Tyr Glu Val Met Asn Met Asp Leu Glu Thr Arg Arg Ser Phe Ala  
5 10 15  
Val Gln Gln Gly His Tyr Gln Asp Pro Arg Ala Ser Asp Tyr Asp Leu  
20 25 30  
Pro Arg Ala Ser Asp Tyr Asp Leu Pro Arg Ser Pro Tyr Pro Thr Pro  
35 40 45  
Pro Leu Pro Ser Arg Tyr Gln Leu Gln Asn Met Asp Val Glu Ala Gly  
50 55 60  
Phe Arg Glu Ala Val Tyr Ala Ser Phe Val Ala Gly Met Tyr Asn Tyr  
65 70 75 80  
Val Val Thr Gln Pro Gln Glu Arg Ile Pro Asn Ser Gln Gln Val Glu  
85 90 95  
Gly Ile Leu Arg Asp Met Leu Thr Asn Gly Ser Gln Thr Phe Ser Asn  
100 105 110  
Leu Met Gln Arg Trp Asp Arg Glu Val Asp Arg Glu  
115 120

<210> 297  
<211> 488  
<212> PRT  
<213> Chlamydia

<400> 297  
Lys Gly Ser Leu Pro Ile Leu Gly Pro Phe Leu Asn Gly Lys Met Gly  
5 10 15  
Phe Trp Arg Thr Ser Ile Met Lys Met Asn Arg Ile Trp Leu Leu Leu  
20 25 30  
Leu Thr Phe Ser Ser Ala Ile His Ser Pro Val Arg Gly Glu Ser Leu  
35 40 45  
Val Cys Lys Asn Ala Leu Gln Asp Leu Ser Phe Leu Glu His Leu Leu  
50 55 60  
Gln Val Lys Tyr Ala Pro Lys Thr Trp Lys Glu Gln Tyr Leu Gly Trp  
65 70 75 80  
Asp Leu Val Gln Ser Ser Val Ser Ala Gln Gln Lys Leu Arg Thr Gln  
85 90 95  
Glu Asn Pro Ser Thr Ser Phe Cys Gln Gln Val Leu Ala Asp Phe Ile  
100 105 110

Gly Gly Leu Asn Asp Phe His Ala Gly Val Thr Phe Phe Ala Ile Glu  
 115 120 125  
 Ser Ala Tyr Leu Pro Tyr Thr Val Gln Lys Ser Ser Asp Gly Arg Phe  
 130 135 140  
 Tyr Phe Val Asp Ile Met Thr Phe Ser Ser Glu Ile Arg Val Gly Asp  
 145 150 155 160  
 Glu Leu Leu Glu Val Asp Gly Ala Pro Val Gln Asp Val Leu Ala Thr  
 165 170 175  
 Leu Tyr Gly Ser Asn His Lys Gly Thr Ala Ala Glu Glu Ser Ala Ala  
 180 185 190  
 Leu Arg Thr Leu Phe Ser Arg Met Ala Ser Leu Gly His Lys Val Pro  
 195 200 205  
 Ser Gly Arg Thr Thr Leu Lys Ile Arg Arg Pro Phe Gly Thr Thr Arg  
 210 215 220  
 Glu Val Arg Val Lys Trp Arg Tyr Val Pro Glu Gly Val Gly Asp Leu  
 225 230 235 240  
 Ala Thr Ile Ala Pro Ser Ile Arg Ala Pro Gln Leu Gln Lys Ser Met  
 245 250 255  
 Arg Ser Phe Phe Pro Lys Lys Asp Asp Ala Phe His Arg Ser Ser Ser  
 260 265 270  
 Leu Phe Tyr Ser Pro Met Val Pro His Phe Trp Ala Glu Leu Arg Asn  
 275 280 285  
 His Tyr Ala Thr Ser Gly Leu Lys Ser Gly Tyr Asn Ile Gly Ser Thr  
 290 295 300  
 Asp Gly Phe Leu Pro Val Ile Gly Pro Val Ile Trp Glu Ser Glu Gly  
 305 310 315 320  
 Leu Phe Arg Ala Tyr Ile Ser Ser Val Thr Asp Gly Asp Gly Lys Ser  
 325 330 335  
 His Lys Val Gly Phe Leu Arg Ile Pro Thr Tyr Ser Trp Gln Asp Met  
 340 345 350  
 Glu Asp Phe Asp Pro Ser Gly Pro Pro Pro Trp Glu Glu Phe Ala Lys  
 355 360 365  
 Ile Ile Gln Val Phe Ser Ser Asn Thr Glu Ala Leu Ile Ile Asp Gln  
 370 375 380  
 Thr Asn Asn Pro Gly Gly Ser Val Leu Tyr Leu Tyr Ala Leu Leu Ser  
 385 390 395 400  
 Met Leu Thr Asp Arg Pro Leu Glu Leu Pro Lys His Arg Met Ile Leu  
 405 410 415  
 Thr Gln Asp Glu Val Val Asp Ala Leu Asp Trp Leu Thr Leu Leu Glu  
 420 425 430

Asn Val Asp Thr Asn Val Glu Ser Arg Leu Ala Leu Gly Asp Asn Met  
 435 440 445

Glu Gly Tyr Thr Val Asp Leu Gln Val Ala Glu Tyr Leu Lys Ser Phe  
 450 455 460

Gly Arg Gln Val Leu Asn Cys Trp Ser Lys Gly Asp Ile Glu Leu Ser  
 465 470 475 480

Thr Pro Ile Pro Leu Phe Gly Phe  
 485

<210> 298  
 <211> 140  
 <212> PRT  
 <213> Chlamydia

<400> 298  
 Arg Ile Asp Ile Ser Ser Val Thr Phe Phe Ile Gly Ile Leu Leu Ala  
 5 10 15

Val Asn Ala Leu Thr Tyr Ser His Val Leu Arg Asp Leu Ser Val Ser  
 20 25 30

Met Asp Ala Leu Phe Ser Arg Asn Thr Leu Ala Val Leu Leu Gly Leu  
 35 40 45

Val Ser Ser Val Leu Asp Asn Val Pro Leu Val Ala Ala Thr Ile Gly  
 50 55 60

Met Tyr Asp Leu Pro Met Asn Asp Pro Leu Trp Lys Leu Ile Ala Tyr  
 65 70 75 80

Thr Ala Gly Thr Gly Gly Ser Ile Leu Ile Ile Gly Ser Ala Ala Gly  
 85 90 95

Val Ala Tyr Met Gly Met Glu Lys Val Ser Phe Gly Trp Tyr Val Lys  
 100 105 110

His Ala Ser Trp Ile Ala Leu Ala Ser Tyr Phe Gly Gly Leu Ala Val  
 115 120 125

Tyr Phe Leu Met Glu Asn Cys Val Asn Leu Phe Val  
 130 135 140

<210> 299  
 <211> 361  
 <212> PRT  
 <213> Chlamydia

<400> 299  
 His Gln Glu Ile Ala Asp Ser Pro Leu Val Lys Lys Ala Glu Glu Gln  
 5 10 15

Ile Asn Gln Ala Gln Gln Asp Ile Gln Thr Ile Thr Pro Ser Gly Leu  
 20 25 30

Asp Ile Pro Ile Val Gly Pro Ser Gly Ser Ala Ala Ser Ala Gly Ser  
 35 40 45

Ala Ala Gly Ala Leu Lys Ser Ser Asn Asn Ser Gly Arg Ile Ser Leu  
     50                                    55                                    60  
 Leu Leu Asp Asp Val Asp Asn Glu Met Ala Ala Ile Ala Met Gln Gly  
     65                                    70                                    75                                    80  
 Phe Arg Ser Met Ile Glu Gln Phe Asn Val Asn Asn Pro Ala Thr Ala  
                                     85                                    90                                    95  
 Lys Glu Leu Gln Ala Met Glu Ala Gln Leu Thr Ala Met Ser Asp Gln  
                                     100                                    105                                    110  
 Leu Val Gly Ala Asp Gly Glu Leu Pro Ala Glu Ile Gln Ala Ile Lys  
                                     115                                    120                                    125  
 Asp Ala Leu Ala Gln Ala Leu Lys Gln Pro Ser Ala Asp Gly Leu Ala  
     130                                    135                                    140  
 Thr Ala Met Gly Gln Val Ala Phe Ala Ala Ala Lys Val Gly Gly Gly  
     145                                    150                                    155                                    160  
 Ser Ala Gly Thr Ala Gly Thr Val Gln Met Asn Val Lys Gln Leu Tyr  
                                     165                                    170                                    175  
 Lys Thr Ala Phe Ser Ser Thr Ser Ser Ser Tyr Ala Ala Ala Leu  
                                     180                                    185                                    190  
 Ser Asp Gly Tyr Ser Ala Tyr Lys Thr Leu Asn Ser Leu Tyr Ser Glu  
     195                                    200                                    205  
 Ser Arg Ser Gly Val Gln Ser Ala Ile Ser Gln Thr Ala Asn Pro Ala  
     210                                    215                                    220  
 Leu Ser Arg Ser Val Ser Arg Ser Gly Ile Glu Ser Gln Gly Arg Ser  
     225                                    230                                    235                                    240  
 Ala Asp Ala Ser Gln Arg Ala Ala Glu Thr Ile Val Arg Asp Ser Gln  
                                     245                                    250                                    255  
 Thr Leu Gly Asp Val Tyr Ser Arg Leu Gln Val Leu Asp Ser Leu Met  
                                     260                                    265                                    270  
 Ser Thr Ile Val Ser Asn Pro Gln Ala Asn Gln Glu Glu Ile Met Gln  
                                     275                                    280                                    285  
 Lys Leu Thr Ala Ser Ile Ser Lys Ala Pro Gln Phe Gly Tyr Pro Ala  
     290                                    295                                    300  
 Val Gln Asn Ser Val Asp Ser Leu Gln Lys Phe Ala Ala Gln Leu Glu  
     305                                    310                                    315                                    320  
 Arg Glu Phe Val Asp Gly Glu Arg Ser Leu Ala Glu Ser Gln Glu Asn  
                                     325                                    330                                    335  
 Ala Phe Arg Lys Gln Pro Ala Phe Ile Gln Gln Val Leu Val Asn Ile  
                                     340                                    345                                    350  
 Ala Ser Leu Phe Ser Gly Tyr Leu Ser  
     355                                    360



<210> 300  
 <211> 207  
 <212> PRT  
 <213> Chlamydia

<400> 300  
 Ser Ser Lys Ile Val Ser Leu Cys Glu Gly Ala Val Ala Asp Ala Arg  
                     5                    10                    15  
 Met Cys Lys Ala Glu Leu Ile Lys Lys Glu Ala Asp Ala Tyr Leu Phe  
                     20                    25                    30  
 Cys Glu Lys Ser Gly Ile Tyr Leu Thr Lys Lys Glu Gly Ile Leu Ile  
                     35                    40                    45  
 Pro Ser Ala Gly Ile Asp Glu Ser Asn Thr Asp Gln Pro Phe Val Leu  
                     50                    55                    60  
 Tyr Pro Lys Asp Ile Leu Gly Ser Cys Asn Arg Ile Gly Glu Trp Leu  
                     65                    70                    75                    80  
 Arg Asn Tyr Phe Arg Val Lys Glu Leu Gly Val Ile Ile Thr Asp Ser  
                     85                    90                    95  
 His Thr Thr Pro Met Arg Arg Gly Val Leu Gly Ile Gly Leu Cys Trp  
                     100                    105                    110  
 Tyr Gly Phe Ser Pro Leu His Asn Tyr Ile Gly Ser Leu Asp Cys Phe  
                     115                    120                    125  
 Gly Arg Pro Leu Gln Met Thr Gln Ser Asn Leu Val Asp Ala Leu Ala  
                     130                    135                    140  
 Val Ala Ala Val Val Cys Met Gly Glu Gly Asn Glu Gln Thr Pro Leu  
                     145                    150                    155                    160  
 Ala Val Ile Glu Gln Ala Pro Asn Met Val Tyr His Ser Tyr Pro Thr  
                     165                    170                    175  
 Ser Arg Glu Glu Tyr Cys Ser Leu Arg Ile Asp Glu Thr Glu Asp Leu  
                     180                    185                    190  
 Tyr Gly Pro Phe Leu Gln Ala Val Thr Trp Ser Gln Glu Lys Lys  
                     195                    200                    205

<210> 301  
 <211> 183  
 <212> PRT  
 <213> Chlamydia

<400> 301  
 Ile Pro Pro Ala Pro Arg Gly His Pro Gln Ile Glu Val Thr Phe Asp  
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 Ile Asp Ala Asn Gly Ile Leu His Val Ser Ala Lys Asp Ala Ala Ser  
                     20                    25                    30  
 Gly Arg Glu Gln Lys Ile Arg Ile Glu Ala Ser Ser Gly Leu Lys Glu  
                     35                    40                    45

Asp Glu Ile Gln Gln Met Ile Arg Asp Ala Glu Leu His Lys Glu Glu  
 50 55 60  
 Asp Lys Gln Arg Lys Glu Ala Ser Asp Val Lys Asn Glu Ala Asp Gly  
 65 70 75 80  
 Met Ile Phe Arg Ala Glu Lys Ala Val Lys Asp Tyr His Asp Lys Ile  
 85 90 95  
 Pro Ala Glu Leu Val Lys Glu Ile Glu Glu His Ile Glu Lys Val Arg  
 100 105 110  
 Gln Ala Ile Lys Glu Asp Ala Ser Thr Thr Ala Ile Lys Ala Ala Ser  
 115 120 125  
 Asp Glu Leu Ser Thr Arg Met Gln Lys Ile Gly Glu Ala Met Gln Ala  
 130 135 140  
 Gln Ser Ala Ser Ala Ala Ala Ser Ser Ala Ala Asn Ala Gln Gly Gly  
 145 150 155 160  
 Pro Asn Ile Asn Ser Glu Asp Leu Lys Lys His Ser Phe Ser Thr Arg  
 165 170 175  
 Pro Pro Ala Gly Gly Ser Ala  
 180

<210> 302  
 <211> 232  
 <212> PRT  
 <213> Chlamydia

<400> 302  
 Met Thr Lys His Gly Lys Arg Ile Arg Gly Ile Gln Glu Thr Tyr Asp  
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 Leu Ala Lys Ser Tyr Ser Leu Gly Glu Ala Ile Asp Ile Leu Lys Gln  
 20 25 30  
 Cys Pro Thr Val Arg Phe Asp Gln Thr Val Asp Val Ser Val Lys Leu  
 35 40 45  
 Gly Ile Asp Pro Arg Lys Ser Asp Gln Gln Ile Arg Gly Ser Val Ser  
 50 55 60  
 Leu Pro His Gly Thr Gly Lys Val Leu Arg Ile Leu Val Phe Ala Ala  
 65 70 75 80  
 Gly Asp Lys Ala Ala Glu Ala Ile Glu Ala Gly Ala Asp Phe Val Gly  
 85 90 95  
 Ser Asp Asp Leu Val Glu Lys Ile Lys Gly Gly Trp Val Asp Phe Asp  
 100 105 110  
 Val Ala Val Ala Thr Pro Asp Met Met Arg Glu Val Gly Lys Leu Gly  
 115 120 125  
 Lys Val Leu Gly Pro Arg Asn Leu Met Pro Thr Pro Lys Ala Gly Thr  
 130 135 140

Val Thr Thr Asp Val Val Lys Thr Ile Ala Glu Leu Arg Lys Gly Lys  
 145 150 155 160  
 Ile Glu Phe Lys Ala Asp Arg Ala Gly Val Cys Asn Val Gly Val Ala  
 165 170 175  
 Lys Leu Ser Phe Asp Ser Ala Gln Ile Lys Glu Asn Val Glu Ala Leu  
 180 185 190  
 Cys Ala Ala Leu Val Lys Ala Lys Pro Ala Thr Ala Lys Gly Gln Tyr  
 195 200 205  
 Leu Val Asn Phe Thr Ile Ser Ser Thr Met Gly Pro Gly Val Thr Val  
 210 215 220  
 Asp Thr Arg Glu Leu Ile Ala Leu  
 225 230

<210> 303  
 <211> 238  
 <212> PRT  
 <213> chlamydia

<400> 303  
 Ile Asn Ser Lys Leu Glu Thr Lys Asn Leu Ile Tyr Leu Lys Leu Lys  
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 Ile Lys Lys Ser Phe Lys Met Gly Asn Ser Gly Phe Tyr Leu Tyr Asn  
 20 25 30  
 Thr Gln Asn Cys Val Phe Ala Asp Asn Ile Lys Val Gly Gln Met Thr  
 35 40 45  
 Glu Pro Leu Lys Asp Gln Gln Ile Ile Leu Gly Thr Thr Ser Thr Pro  
 50 55 60  
 Val Ala Ala Lys Met Thr Ala Ser Asp Gly Ile Ser Leu Thr Val Ser  
 65 70 75 80  
 Asn Asn Pro Ser Thr Asn Ala Ser Ile Thr Ile Gly Leu Asp Ala Glu  
 85 90 95  
 Lys Ala Tyr Gln Leu Ile Leu Glu Lys Leu Gly Asp Gln Ile Leu Gly  
 100 105 110  
 Gly Ile Ala Asp Thr Ile Val Asp Ser Thr Val Gln Asp Ile Leu Asp  
 115 120 125  
 Lys Ile Thr Thr Asp Pro Ser Leu Gly Leu Leu Lys Ala Phe Asn Asn  
 130 135 140  
 Phe Pro Ile Thr Asn Lys Ile Gln Cys Asn Gly Leu Phe Thr Pro Arg  
 145 150 155 160  
 Asn Ile Glu Thr Leu Leu Gly Gly Thr Glu Ile Gly Lys Phe Thr Val  
 165 170 175  
 Thr Pro Lys Ser Ser Gly Ser Met Phe Leu Val Ser Ala Asp Ile Ile  
 180 185 190

Ala Ser Arg Met Glu Gly Gly Val Val Leu Ala Leu Val Arg Glu Gly  
 195 200 205

Asp Ser Lys Pro Tyr Ala Ile Ser Tyr Gly Tyr Ser Ser Gly Val Pro  
 210 215 220

Asn Leu Cys Ser Leu Arg Thr Arg Ile Ile Asn Thr Gly Leu  
 225 230 235

<210> 304

<211> 133

<212> PRT

<213> Chlamydia

<400> 304

His Met His His His His His His Met Ala Ser Ile Cys Gly Arg Leu  
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Gly Ser Gly Thr Gly Asn Ala Leu Lys Ala Phe Phe Thr Gln Pro Ser  
 20 25 30

Asn Lys Met Ala Arg Val Val Asn Lys Thr Lys Gly Met Asp Lys Thr  
 35 40 45

Val Lys Val Ala Lys Ser Ala Ala Glu Leu Thr Ala Asn Ile Leu Glu  
 50 55 60

Gln Ala Gly Gly Ala Gly Ser Ser Ala His Ile Thr Ala Ser Gln Val  
 65 70 75 80

Ser Lys Gly Leu Gly Asp Thr Arg Thr Val Val Ala Leu Gly Asn Ala  
 85 90 95

Phe Asn Gly Ala Leu Pro Gly Thr Val Gln Ser Ala Gln Ser Phe Phe  
 100 105 110

Ser His Met Lys Ala Ala Ser Gln Lys Thr Gln Glu Gly Asp Glu Gly  
 115 120 125

Leu Thr Ala Asp Leu  
 130

<210> 305

<211> 125

<212> PRT

<213> Chlamydia

<400> 305

Met Ala Ser Ile Cys Gly Arg Leu Gly Ser Gly Thr Gly Asn Ala Leu  
 5 10 15

Lys Ala Phe Phe Thr Gln Pro Ser Asn Lys Met Ala Arg Val Val Asn  
 20 25 30

Lys Thr Lys Gly Met Asp Lys Thr Val Lys Val Ala Lys Ser Ala Ala  
 35 40 45

Glu Leu Thr Ala Asn Ile Leu Glu Gln Ala Gly Gly Ala Gly Ser Ser  
 50 55 60

Ala His Ile Thr Ala Ser Gln Val Ser Lys Gly Leu Gly Asp Thr Arg  
 65 70 75 80

Thr Val Val Ala Leu Gly Asn Ala Phe Asn Gly Ala Leu Pro Gly Thr  
 85 90 95

Val Gln Ser Ala Gln Ser Phe Phe Ser His Met Lys Ala Ala Ser Gln  
 100 105 110

Lys Thr Gln Glu Gly Asp Glu Gly Leu Thr Ala Asp Leu  
 115 120 125

&lt;210&gt; 306

&lt;211&gt; 38

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis

&lt;400&gt; 306

gagagcggcc gctcatgttt ataacaagg aacttatg

38

&lt;210&gt; 307

&lt;211&gt; 39

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis

&lt;400&gt; 307

gagagcggcc gcttacttag gtgagaagaa gggagtttc

39

&lt;210&gt; 308

&lt;211&gt; 1860

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis

&lt;400&gt; 308

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ggcgacgag	tccaacgct	ggtcgggagc	gctccggcgg	caagtctcgg	catctccacc	240
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ccatcacact	ggcggccgct	catgtttata	acaaaggaac	ttatgaatcg	agttatagaa	480
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gataaccttta	ccatgatctc	ttcctgtcct	gaaggcacta	attacatcat	caatcgcaaa	720
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tcttccccta tacaatcaa tgctcctgag tatgaaactc ccttcttctc acctaagtaa 1860

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&lt;210&gt; 309

&lt;211&gt; 619

&lt;212&gt; PRT

&lt;213&gt; Chlamydia trachomatis

&lt;400&gt; 309

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Met His His His His His His Thr Ala Ala Ser Asp Asn Phe Gln Leu
 1      5      10
Ser Gln Gly Gly Gln Gly Phe Ala Ile Pro Ile Gly Gln Ala Met Ala
      20      25      30
Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala
      35      40      45
Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
      50      55      60
Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
      65      70      75
Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
      85      90      95
Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser
      100      105      110
Val Thr Trp Gln Thr Lys Ser Gly Gly Thr Arg Thr Gly Asn Val Thr
      115      120      125
Leu Ala Glu Gly Pro Pro Ala Glu Phe Cys Arg Tyr Pro Ser His Trp
      130      135      140
Arg Pro Leu Met Phe Ile Thr Lys Glu Leu Met Asn Arg Val Ile Glu
      145      150      155
Ile His Ala His Tyr Asp Gln Arg Gln Leu Ser Gln Ser Pro Asn Thr
      165      170      175
Asn Phe Leu Val His His Pro Tyr Leu Thr Leu Ile Pro Lys Phe Leu
      180      185      190
Leu Gly Ala Leu Ile Val Tyr Ala Pro Tyr Ser Phe Ala Glu Met Glu
      195      200      205
Leu Ala Ile Ser Gly His Lys Gln Gly Lys Asp Arg Asp Thr Phe Thr
      210      215      220
Met Ile Ser Ser Cys Pro Glu Gly Thr Asn Tyr Ile Ile Asn Arg Lys
      225      230      235
Leu Ile Leu Ser Asp Phe Ser Leu Leu Asn Lys Val Ser Ser Gly Gly
      245      250      255
Ala Phe Arg Asn Leu Ala Gly Lys Ile Ser Phe Leu Gly Lys Asn Ser
      260      265      270
Ser Ala Ser Ile His Phe Lys His Ile Asn Ile Asn Gly Phe Gly Ala
      275      280      285
Gly Val Phe Ser Glu Ser Ser Ile Glu Phe Thr Asp Leu Arg Lys Leu
      290      295      300
Val Ala Phe Gly Ser Glu Ser Thr Gly Gly Ile Phe Thr Ala Lys Glu
      305      310      315
Asp Ile Ser Phe Lys Asn Asn His His Ile Ala Phe Arg Asn Asn Ile
      325      330      335
Thr Lys Gly Asn Gly Gly Val Ile Gln Leu Gln Gly Asp Met Lys Gly
      340      345      350
Ser Val Ser Phe Val Asp Gln Arg Gly Ala Ile Ile Phe Thr Asn Asn
      355      360      365
Gln Ala Val Thr Ser Ser Ser Met Lys His Ser Gly Arg Gly Gly Ala

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370	Ile Ser Gly Asp Phe	375	Ala Gly Ser Arg Ile	380	Leu Phe Leu Asn Asn Gln
385	Gln Ile Thr Phe	390	Gly Asn Ser Ala Val	395	His Gly Gly Ala Ile Tyr
	405	410	Leu Gly Asn Ala Gly	415	Pro Leu Ala
Asn Lys Asn Gly Leu Val	420	425	Glu Phe Leu Gly	430	Ala Gly Pro Leu Ala
Phe Lys Glu Asn Thr Thr	435	440	Ile Ala Asn Gly Gly	445	Ala Ile Tyr Thr Ser
Asn Phe Lys Ala Asn Gln	450	455	Gln Thr Ser Pro Ile	460	Leu Phe Ser Gln Asn
His Ala Asn Lys Lys Gly	465	470	Gly Ala Ile Tyr Ala	475	Gln Tyr Val Asn Leu
Glu Gln Asn Gln Asp Thr	485	490	Ile Arg Phe Glu Lys	495	Asn Thr Ala Lys Glu
Gly Gly Gly Ala Ile Thr	500	505	Ser Ser Gln Cys Ser	510	Ile Thr Ala His Asn
Thr Ile Thr Phe Ser Asp	515	520	Asn Ala Gly Asp Leu	525	Gly Gly Gly Ala
Ile Leu Leu Glu Gly Lys	530	535	Lys Pro Ser Leu Thr	540	Leu Ile Ala His Ser
Gly Asn Ile Ala Phe Ser	545	550	Gly Asn Thr Met Leu	555	His Ile Thr Lys Lys
Ala Ser Leu Asp Arg His	565	570	Asn Ser Ile Leu Ile	575	Lys Glu Ala Pro Tyr
Lys Ile Gln Leu Ala Ala	580	585	Asn Lys Asn His Ser	590	Ile His Phe Phe Asp
Pro Val Met Ala Leu Ser	595	600	Ala Ser Ser Ser Pro	605	Ile Gln Ile Asn Ala
Pro Glu Tyr Glu Thr Pro	610	615	Phe Phe Ser Pro Lys		

&lt;210&gt; 310

&lt;211&gt; 39

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis

&lt;400&gt; 310

gagagcggcc gctccattct attcatttct ttgatcctg

39

&lt;210&gt; 311

&lt;211&gt; 33

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis

&lt;400&gt; 311

gagagcggcc gcttagaagc caacatagcc tcc

33

&lt;210&gt; 312

&lt;211&gt; 2076

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis

&lt;400&gt; 312

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accgttcata tcgggcctac	cgccttcctc ggcttggtg	ttgtcgacaa caacggcaac	180
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gcgcttaacg ggcattcatcc	cggtgacgtc atctcggtga	cctggcaaac caagtccggc	360
ggcacgcgta cagggaacgt	gacattggcc gagggacccc	cggccgaatt ctgcagatat	420

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aatagaacat cgattttttaa ccaaccggtt catctatata atggcaccct atctatcgaa 660
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&lt;210&gt; 313

&lt;211&gt; 691

&lt;212&gt; PRT

&lt;213&gt; Chlamydia trachomatis

&lt;400&gt; 313

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Met His His His His His Thr Ala Ala Ser Asp Asn Phe Gln Leu
 1          5          10          15
Ser Gln Gly Gly Gln Gly Phe Ala Ile Pro Ile Gly Gln Ala Met Ala
 20          25          30
Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala
 35          40          45
Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
 50          55          60
Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
 65          70          75          80
Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
 85          90          95
Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser
 100         105         110
Val Thr Trp Gln Thr Lys Ser Gly Gly Thr Arg Thr Gly Asn Val Thr
 115         120         125
Leu Ala Glu Gly Pro Pro Ala Glu Phe Cys Arg Tyr Pro Ser His Trp
 130         135         140
Arg Pro Leu His Ser Ile His Phe Phe Asp Pro Val Met Ala Leu Ser
 145         150         155         160
Ala Ser Ser Ser Pro Ile Gln Ile Asn Ala Pro Glu Tyr Glu Thr Pro
 165         170         175
Phe Phe Ser Pro Lys Gly Met Ile Val Phe Ser Gly Ala Asn Leu Leu
 180         185         190
Asp Asp Ala Arg Glu Asp Val Ala Asn Arg Thr Ser Ile Phe Asn Gln
 195         200         205

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Pro	Val	His	Leu	Tyr	Asn	Gly	Thr	Leu	Ser	Ile	Glu	Asn	Gly	Ala	His
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Leu	Ile	Val	Gln	Ser	Phe	Lys	Gln	Thr	Gly	Gly	Arg	Ile	Ser	Leu	Ser
225					230					235					240
Pro	Gly	Ser	Ser	Leu	Ala	Leu	Tyr	Thr	Met	Asn	Ser	Phe	Phe	His	Gly
				245					250					255	
Asn	Ile	Ser	Ser	Lys	Glu	Pro	Leu	Glu	Ile	Asn	Gly	Leu	Ser	Phe	Gly
			260					265						270	
Val	Asp	Ile	Ser	Pro	Ser	Asn	Leu	Gln	Ala	Glu	Ile	Arg	Ala	Gly	Asn
		275					280					285			
Ala	Pro	Leu	Arg	Leu	Ser	Gly	Ser	Pro	Ser	Ile	His	Asp	Pro	Glu	Gly
	290					295					300				
Leu	Phe	Tyr	Glu	Asn	Arg	Asp	Thr	Ala	Ala	Ser	Pro	Tyr	Gln	Met	Glu
305				310						315					320
Ile	Leu	Leu	Thr	Ser	Asp	Lys	Thr	Val	Asp	Ile	Ser	Lys	Phe	Thr	Thr
				325					330					335	
Asp	Ser	Leu	Val	Thr	Asn	Lys	Gln	Ser	Gly	Phe	Gln	Gly	Ala	Trp	His
			340					345					350		
Phe	Ser	Trp	Gln	Pro	Asn	Thr	Ile	Asn	Asn	Thr	Lys	Gln	Lys	Ile	Leu
		355					360					365			
Arg	Ala	Ser	Trp	Leu	Pro	Thr	Gly	Glu	Tyr	Val	Leu	Glu	Ser	Asn	Arg
	370					375					380				
Val	Gly	Arg	Ala	Val	Pro	Asn	Ser	Leu	Trp	Ser	Thr	Phe	Leu	Leu	Leu
385					390					395					400
Gln	Thr	Ala	Ser	His	Asn	Leu	Gly	Asp	His	Leu	Cys	Asn	Asn	Arg	Ser
				405					410					415	
Leu	Ile	Pro	Thr	Ser	Tyr	Phe	Gly	Val	Leu	Ile	Gly	Gly	Thr	Gly	Ala
			420					425					430		
Glu	Met	Ser	Thr	His	Ser	Ser	Glu	Glu	Glu	Ser	Phe	Ile	Ser	Arg	Leu
		435					440					445			
Gly	Ala	Thr	Gly	Thr	Ser	Ile	Ile	Arg	Leu	Thr	Pro	Ser	Leu	Thr	Leu
	450					455					460				
Ser	Gly	Gly	Gly	Ser	His	Met	Phe	Gly	Asp	Ser	Phe	Val	Ala	Asp	Leu
465					470				475						480
Pro	Glu	His	Ile	Thr	Ser	Glu	Gly	Ile	Val	Gln	Asn	Val	Gly	Leu	Thr
				485					490					495	
His	Val	Trp	Gly	Pro	Leu	Thr	Val	Asn	Ser	Thr	Leu	Cys	Ala	Ala	Leu
			500					505					510		
Asp	His	Asn	Ala	Met	Val	Arg	Ile	Cys	Ser	Lys	Lys	Asp	His	Thr	Tyr
		515					520					525			
Gly	Lys	Trp	Asp	Thr	Phe	Gly	Met	Arg	Gly	Thr	Leu	Gly	Ala	Ser	Tyr
	530					535					540				
Thr	Phe	Leu	Glu	Tyr	Asp	Gln	Thr	Met	Arg	Val	Phe	Ser	Phe	Ala	Asn
545					550					555					560
Ile	Glu	Ala													

690

&lt;210&gt; 314

&lt;211&gt; 38

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis

&lt;400&gt; 314

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38

&lt;210&gt; 315

&lt;211&gt; 36

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis

&lt;400&gt; 315

agcggccgct tataattctg catcatcttc tatggc

36

&lt;210&gt; 316

&lt;211&gt; 1941

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis

&lt;400&gt; 316

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cagggatccg	ccattccgat	cgggcaggcg	atggcgatcg	cgggccagat	caagcttccc	120
accgttcata	tcgggcctac	cgcttcctc	ggcttggtg	ttgtcgacaa	caacggcaac	180
ggcgacgag	tccaacgct	ggtcgggagc	gctccggcgg	caagtctcgg	catctccacc	240
ggcgacgtga	tcaccgcggt	cgacggcgct	ccgatcaact	cggccaccgc	gatggcggac	300
gcgcttaacg	ggcatcatcc	cggtgacgtc	atctcgggtga	cctggcaaac	caagtcgggc	360
ggcacgcgta	cagggaacgt	gacattggcc	gagggacccc	cgcccggaatt	ctgcagatat	420
ccatcacact	ggcgccgct	catgattaaa	agaacttctc	tatcctttgc	ttgcctcagt	480
tttttttatc	tttcaactat	atccattttg	caagctaattg	aaacggatac	gctacagttc	540
cggcgattta	ctttttcggg	tagagagatt	cagttcgtcc	tagatcccgc	ctctttaatt	600
accgcccata	acatcggttt	atctaattta	cagtcaaacg	gaaccggagc	ctgtaccatt	660
tcaggcaata	cgcaaacgca	aatcttttct	aattccgtta	acaccaccgc	agattctggt	720
ggagcctttg	atatggttac	tacctcattc	acggcctctg	ataatgctaa	tctactcttc	780
tgcaacaact	actgcacaca	taataaaggc	ggaggagcta	ttcgttccgg	aggacctatt	840
cgattcttaa	ataatcaaga	cgtgcttttt	tataataaca	tatcggcagg	ggctaaatat	900
gttgaacag	gagatcacia	cgaaaaaat	aggggcgggtg	cgctttatgc	aactactatc	960
actttgacag	ggaatcgaac	tcttgccctt	attaacaata	tgtctggaga	ctgcggtgga	1020
gccatctctg	ctgacactca	aatatcaata	actgataccg	ttaaaggaat	tttatttgaa	1080
aacaatcaca	cgctcaatca	tataccgtac	acgcaagctg	aaaatatggc	acgaggagga	1140
gcaatctgta	gtagaagaga	cttgtgtctca	atcagcaata	attctggtcc	catagttttt	1200
aactataacc	aaggcgggaa	aggtggagct	attagcgcta	cccgatgtgt	tattgacaat	1260
aacaaagaaa	gaatcatctt	ttcaaacaat	agttccctgg	gatggagcca	atcttcttct	1320
gcaagtaacg	gaggagccat	tcaaacyaca	caaggattta	ctttacgaaa	taataaaggc	1380
tctatctact	tcgacagcaa	cactgctaca	cacgccgggg	gagccattaa	ctgtggttac	1440
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gcctttaatt	tatcgaaacc	acgttcagcg	acaaattata	tccatacagg	gacaggcgat	1560
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ctttttcata	ttaataataa	tgagataaca	ccatatacat	tgtctctcgg	cgctaaaaaa	1680
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aataaccac	catctcctac	cagtagaaac	accattaccg	ttaacccgga	aacagagttt	1800
tctggagctg	ttgtgttctc	ctacaatcaa	atgtctagt	acatacgaac	tctgatgggt	1860
aaagaacaca	attacattaa	agaagcccca	actactttta	aattcggaac	gctagccata	1920
gaagatgatg	cagaattata	a				1941

&lt;210&gt; 317

&lt;211&gt; 646

&lt;212&gt; PRT

&lt;213&gt; Chlamydia trachomatis

&lt;400&gt; 317

Met	His	His	His	His	His	His	Thr	Ala	Ala	Ser	Asp	Asn	Phe	Gln	Leu
1				5					10					15	
Ser	Gln	Gly	Gly	Gln	Gly	Phe	Ala	Ile	Pro	Ile	Gly	Gln	Ala	Met	Ala
		20						25					30		
Ile	Ala	Gly	Gln	Ile	Lys	Leu	Pro	Thr	Val	His	Ile	Gly	Pro	Thr	Ala
		35					40					45			
Phe	Leu	Gly	Leu	Gly	Val	Val	Asp	Asn	Asn	Gly	Asn	Gly	Ala	Arg	Val
	50					55					60				
Gln	Arg	Val	Val	Gly	Ser	Ala	Pro	Ala	Ala	Ser	Leu	Gly	Ile	Ser	Thr
65					70					75					80
Gly	Asp	Val	Ile	Thr	Ala	Val	Asp	Gly	Ala	Pro	Ile	Asn	Ser	Ala	Thr
				85					90					95	
Ala	Met	Ala	Asp	Ala	Leu	Asn	Gly	His	His	Pro	Gly	Asp	Val	Ile	Ser
			100					105					110		
Val	Thr	Trp	Gln	Thr	Lys	Ser	Gly	Gly	Thr	Arg	Thr	Gly	Asn	Val	Thr
		115					120					125			
Leu	Ala	Glu	Gly	Pro	Pro	Ala	Glu	Phe	Cys	Arg	Tyr	Pro	Ser	His	Trp
	130					135					140				
Arg	Pro	Leu	Met	Ile	Lys	Arg	Thr	Ser	Leu	Ser	Phe	Ala	Cys	Leu	Ser
145					150					155					160
Phe	Phe	Tyr	Leu	Ser	Thr	Ile	Ser	Ile	Leu	Gln	Ala	Asn	Glu	Thr	Asp
				165					170					175	
Thr	Leu	Gln	Phe	Arg	Arg	Phe	Thr	Phe	Ser	Asp	Arg	Glu	Ile	Gln	Phe
			180					185					190		
Val	Leu	Asp	Pro	Ala	Ser	Leu	Ile	Thr	Ala	Gln	Asn	Ile	Val	Leu	Ser
		195					200					205			
Asn	Leu	Gln	Ser	Asn	Gly	Thr	Gly	Ala	Cys	Thr	Ile	Ser	Gly	Asn	Thr
	210					215					220				
Gln	Thr	Gln	Ile	Phe	Ser	Asn	Ser	Val	Asn	Thr	Thr	Ala	Asp	Ser	Gly
225					230					235					240
Gly	Ala	Phe	Asp	Met	Val	Thr	Thr	Ser	Phe	Thr	Ala	Ser	Asp	Asn	Ala
				245					250					255	
Asn	Leu	Leu	Phe	Cys	Asn	Asn	Tyr	Cys	Thr	His	Asn	Lys	Gly	Gly	Gly
			260					265					270		
Ala	Ile	Arg	Ser	Gly	Gly	Pro	Ile	Arg	Phe	Leu	Asn	Asn	Gln	Asp	Val
			275				280						285		
Leu	Phe	Tyr	Asn	Asn	Ile	Ser	Ala	Gly	Ala	Lys	Tyr	Val	Gly	Thr	Gly
	290					295					300				
Asp	His	Asn	Glu	Lys	Asn	Arg	Gly	Gly	Ala	Leu	Tyr	Ala	Thr	Thr	Ile
305					310					315					320
Thr	Leu	Thr	Gly	Asn	Arg	Thr	Leu	Ala	Phe	Ile	Asn	Asn	Met	Ser	Gly
				325					330					335	
Asp	Cys	Gly	Gly	Ala	Ile	Ser	Ala	Asp	Thr	Gln	Ile	Ser	Ile	Thr	Asp
			340					345					350		
Thr	Val	Lys	Gly	Ile	Leu	Phe	Glu	Asn	Asn	His	Thr	Leu	Asn	His	Ile
		355					360					365			
Pro	Tyr	Thr	Gln	Ala	Glu	Asn	Met	Ala	Arg	Gly	Gly	Ala	Ile	Cys	Ser
		370				375						380			
Arg	Arg	Asp	Leu	Cys	Ser	Ile	Ser	Asn	Asn	Ser	Gly	Pro	Ile	Val	Phe
385					390					395					400
Asn	Tyr	Asn	Gln	Gly	Gly	Lys	Gly	Gly	Ala	Ile	Ser	Ala	Thr	Arg	Cys
				405					410					415	
Val	Ile	Asp	Asn	Asn	Lys	Glu	Arg	Ile	Ile	Phe	Ser	Asn	Asn	Ser	Ser
			420					425					430		
Leu	Gly	Trp	Ser	Gln	Ser	Ser	Ser	Ala	Ser	Asn	Gly	Gly	Ala	Ile	Gln
		435					440					445			
Thr	Thr	Gln	Gly	Phe	Thr	Leu	Arg	Asn	Asn	Lys	Gly	Ser	Ile	Tyr	Phe
						455					460				

Asp Ser Asn Thr Ala Thr His Ala Gly Gly Ala Ile Asn Cys Gly Tyr  
 465 470 475 480  
 Ile Asp Ile Arg Asp Asn Gly Pro Val Tyr Phe Leu Asn Asn Ser Ala  
 485 490 495  
 Ala Trp Gly Ala Ala Phe Asn Leu Ser Lys Pro Arg Ser Ala Thr Asn  
 500 505 510  
 Tyr Ile His Thr Gly Thr Gly Asp Ile Val Phe Asn Asn Asn Val Val  
 515 520 525  
 Phe Thr Leu Asp Gly Asn Leu Leu Gly Lys Arg Lys Leu Phe His Ile  
 530 535 540  
 Asn Asn Asn Glu Ile Thr Pro Tyr Thr Leu Ser Leu Gly Ala Lys Lys  
 545 550 555 560  
 Asp Thr Arg Ile Tyr Phe Tyr Asp Leu Phe Gln Trp Glu Arg Val Lys  
 565 570 575  
 Glu Asn Thr Ser Asn Asn Pro Pro Ser Pro Thr Ser Arg Asn Thr Ile  
 580 585 590  
 Thr Val Asn Pro Glu Thr Glu Phe Ser Gly Ala Val Val Phe Ser Tyr  
 595 600 605  
 Asn Gln Met Ser Ser Asp Ile Arg Thr Leu Met Gly Lys Glu His Asn  
 610 615 620  
 Tyr Ile Lys Glu Ala Pro Thr Thr Leu Lys Phe Gly Thr Leu Ala Ile  
 625 630 635 640  
 Glu Asp Asp Ala Glu Leu  
 645

&lt;210&gt; 318

&lt;211&gt; 34

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis

&lt;400&gt; 318

gagagcggcc gctcgacata cgaactctga tggg

34

&lt;210&gt; 319

&lt;211&gt; 33

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis

&lt;400&gt; 319

gagagcggcc gcttaaaaga ccagagctcc tcc

33

&lt;210&gt; 320

&lt;211&gt; 2148

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis

&lt;400&gt; 320

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accgttcata	tcgggcctac	cgccttcctc	ggcttgggtg	ttgtcgacaa	caacggcaac	180
ggcgacagag	tccaacgcgt	ggtcgggagc	gctccggcgg	caagtctcgg	catctccacc	240
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ccatcacact	ggcggccgct	cgacatacga	actctgatgg	gtaaagaaca	caattacatt	480
aaagaagccc	caactacttt	aaaattcggg	acgctagcca	tagaagatga	tgcagaatta	540
gaaatcttca	atatcccgtt	tacccaaaaa	ccgactagcc	ttcttgcttt	aggaagcggc	600
gctacgctga	ctggttgaaa	gcacggtaag	ctcaatatta	caaactcttg	tggtatttta	660
ccattatttc	tcaaagaggg	gaagagtccg	ccttgatttc	gcgtcaaccc	acaagatatg	720
acccaaaata	ctggtaccgg	ccaaactcca	tcaagcacia	gtagtataag	cactccaatg	780
attatcttta	atgggcgctt	ctcaattgta	gacgaaaatt	atgaatcagt	ctacgacagt	840

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atggacctct ccagagggaa agcagaacaa ctaattctat ccatagaaac cactaatgat 900
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aataataatt cttcagctcc aacatctgct acctccatcg ctgagcagaa aaaaactagt 1080
gaaaatttta ctcctagtaa cacaactaca gctagtatcc ctaatattaa agcttccgca 1140
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gttgtaaact gggcaccagt cggctacata gtagatccta ttcgtagagg agatctgata 1260
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gataactctt ggtttgcttt gcaaggagct gcaacaacat tatttacaaa acaacaaaaa 1380
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gaaaaagaaa caaataaccg ctttcttctt cgttactatc tttctgcttt atgtttcgaa 1560
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cactccctca aattttctca tctgaaacta tttgctaact atcaagcaga agtggctact 2100
tccactgtct cacactacat caatgcagga ggagctctgg tcttttaa 2148

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&lt;210&gt; 321

&lt;211&gt; 715

&lt;212&gt; PRT

&lt;213&gt; Chlamydia trachomatis

&lt;400&gt; 321

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Met His His His His His His Thr Ala Ala Ser Asp Asn Phe Gln Leu
 1          5          10          15
Ser Gln Gly Gly Gln Gly Phe Ala Ile Pro Ile Gly Gln Ala Met Ala
 20          25          30
Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala
 35          40          45
Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
 50          55          60
Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
 65          70          75          80
Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
 85          90          95
Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser
 100         105         110
Val Thr Trp Gln Thr Lys Ser Gly Gly Thr Arg Thr Gly Asn Val Thr
 115         120         125
Leu Ala Glu Gly Pro Pro Ala Glu Phe Cys Arg Tyr Pro Ser His Trp
 130         135         140
Arg Pro Leu Asp Ile Arg Thr Leu Met Gly Lys Glu His Asn Tyr Ile
 145         150         155         160
Lys Glu Ala Pro Thr Thr Leu Lys Phe Gly Thr Leu Ala Ile Glu Asp
 165         170         175
Asp Ala Glu Leu Glu Ile Phe Asn Ile Pro Phe Thr Gln Asn Pro Thr
 180         185         190
Ser Leu Leu Ala Leu Gly Ser Gly Ala Thr Leu Thr Val Gly Lys His
 195         200         205
Gly Lys Leu Asn Ile Thr Asn Leu Gly Val Ile Leu Pro Ile Ile Leu
 210         215         220
Lys Glu Gly Lys Ser Pro Pro Cys Ile Arg Val Asn Pro Gln Asp Met
 225         230         235         240
Thr Gln Asn Thr Gly Thr Gly Gln Thr Pro Ser Ser Thr Ser Ser Ile
 245         250         255

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Ser	Thr	Pro	Met	Ile	Ile	Phe	Asn	Gly	Arg	Leu	Ser	Ile	Val	Asp	Glu
			260					265					270		
Asn	Tyr	Glu	Ser	Val	Tyr	Asp	Ser	Met	Asp	Leu	Ser	Arg	Gly	Lys	Ala
		275					280					285			
Glu	Gln	Leu	Ile	Leu	Ser	Ile	Glu	Thr	Thr	Asn	Asp	Gly	Gln	Leu	Asp
	290					295					300				
Ser	Asn	Trp	Gln	Ser	Ser	Leu	Asn	Thr	Ser	Leu	Leu	Ser	Pro	Pro	His
305					310					315					320
Tyr	Gly	Tyr	Gln	Gly	Leu	Trp	Thr	Pro	Asn	Trp	Ile	Thr	Thr	Thr	Tyr
			325					330					335		
Thr	Ile	Thr	Leu	Asn	Asn	Asn	Ser	Ser	Ala	Pro	Thr	Ser	Ala	Thr	Ser
			340					345					350		
Ile	Ala	Glu	Gln	Lys	Lys	Thr	Ser	Glu	Thr	Phe	Thr	Pro	Ser	Asn	Thr
	355						360					365			
Thr	Thr	Ala	Ser	Ile	Pro	Asn	Ile	Lys	Ala	Ser	Ala	Gly	Ser	Gly	Ser
	370					375					380				
Gly	Ser	Ala	Ser	Asn	Ser	Gly	Glu	Val	Thr	Ile	Thr	Lys	His	Thr	Leu
385					390					395					400
Val	Val	Asn	Trp	Ala	Pro	Val	Gly	Tyr	Ile	Val	Asp	Pro	Ile	Arg	Arg
			405					410						415	
Gly	Asp	Leu	Ile	Ala	Asn	Ser	Leu	Val	His	Ser	Gly	Arg	Asn	Met	Thr
			420					425					430		
Met	Gly	Leu	Arg	Ser	Leu	Leu	Pro	Asp	Asn	Ser	Trp	Phe	Ala	Leu	Gln
	435						440					445			
Gly	Ala	Ala	Thr	Thr	Leu	Phe	Thr	Lys	Gln	Gln	Lys	Arg	Leu	Ser	Tyr
	450					455					460				
His	Gly	Tyr	Ser	Ser	Ala	Ser	Lys	Gly	Tyr	Thr	Val	Ser	Ser	Gln	Ala
465					470					475					480
Ser	Gly	Ala	His	Gly	His	Lys	Phe	Leu	Leu	Ser	Phe	Ser	Gln	Ser	Ser
			485					490						495	
Asp	Lys	Met	Lys	Glu	Lys	Glu	Thr	Asn	Asn	Arg	Leu	Ser	Ser	Arg	Tyr
			500					505					510		
Tyr	Leu	Ser	Ala	Leu	Cys	Phe	Glu	His	Pro	Met	Phe	Asp	Arg	Ile	Ala
	515						520					525			
Leu	Ile	Gly	Ala	Ala	Ala	Cys	Asn	Tyr	Gly	Thr	His	Asn	Met	Arg	Ser
	530					535					540				
Phe	Tyr	Gly	Thr	Lys	Lys	Ser	Ser	Lys	Gly	Lys	Phe	His	Ser	Thr	Thr
545					550					555					560
Leu	Gly	Ala	Ser	Leu	Arg	Cys	Glu	Leu	Arg	Asp	Ser	Met	Pro	Leu	Arg
			565					570						575	
Ser	Ile	Met	Leu	Thr	Pro	Phe	Ala	Gln	Ala	Leu	Phe	Ser	Arg	Thr	Glu
			580					585					590		
Pro	Ala	Ser	Ile	Arg	Glu	Ser	Gly	Asp	Leu	Ala	Arg	Leu	Phe	Thr	Leu
	595						600					605			
Glu	Gln	Ala	His	Thr	Ala	Val	Val	Ser	Pro	Ile	Gly	Ile	Lys	Gly	Ala
	610					615					620				
Tyr	Ser	Ser	Asp	Thr	Trp	Pro	Thr	Leu	Ser	Trp	Glu	Met	Glu	Leu	Ala
625					630					635					640
Tyr	Gln	Pro	Thr	Leu	Tyr	Trp	Lys	Arg	Pro	Leu	Leu	Asn	Thr	Leu	Leu
			645						650					655	
Ile	Gln	Asn	Asn	Gly	Ser	Trp	Val	Thr	Thr	Asn	Thr	Pro	Leu	Ala	Lys
			660					665					670		
His	Ser	Phe	Tyr	Gly	Arg	Gly	Ser	His	Ser	Leu	Lys	Phe	Ser	His	Leu
	675					680						685			
Lys	Leu	Phe	Ala	Asn	Tyr	Gln	Ala	Glu	Val	Ala	Thr	Ser	Thr	Val	Ser
	690					695					700				
His	Tyr	Ile	Asn	Ala	Gly	Gly	Ala	Leu	Val	Phe					
705					710					715					

&lt;210&gt; 322

&lt;211&gt; 37

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis

&lt;400&gt; 322

gagagcggcc gctcatgcct ttttctttga gatctac

37

&lt;210&gt; 323

&lt;211&gt; 36

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis

&lt;400&gt; 323

gagagcggcc gcttacacag atccattacc ggactg

36

&lt;210&gt; 324

&lt;211&gt; 1896

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis

&lt;400&gt; 324

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gcgcttaacg	ggcatcatcc	cggtgacgtc	atctcgggtga	cctggcaaac	caagtcgggc	360
ggcacgcgta	caggaacgt	gacattggcc	gagggacccc	cggccgaatt	ctgcagatat	420
ccatcacact	ggcggccgct	catgcctttt	tctttgagat	ctacatcatt	ttgtttttta	480
gcttgtttgt	gttccatttc	gtatggattc	gcgagctctc	ctcaagtgtt	aacacctaata	540
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ccaacagtta	gtgatgctcg	gaaagggtct	attttttctg	tagagactag	tttggagatc	1020
tcaggcgctca	aaaaaggggt	catgttcgat	aataatgccg	ggaatttttg	aacagttttt	1080
cgaggtaata	gtaataataa	tgctggtagt	gggggtagtg	ggtctgctac	aacaccaagt	1140
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ggcggagtag	tctacaaagg	aactgtgctt	ttcaaagaca	atgaaggagg	catattcttc	1260
cgagggaaca	cagcatacga	tgattttagg	attcttgctg	ctactagtcg	ggatcagaat	1320
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aatatgacga	gtgatcgctc	tggagagcgc	agcgcagcaa	gaatcttaag	tgatggaacg	1740
actgtttctt	taaatgcttc	cggactatcg	aagctgatct	tttatgatcc	tgtagtacaa	1800
aataattcag	cagcgggtgc	atcgacacca	tcaccattct	cttcttctat	gcctggtgct	1860
gtcacgatta	atcagtcggg	taatggatct	gtgtaa			1896

&lt;210&gt; 325

&lt;211&gt; 631

&lt;212&gt; PRT

&lt;213&gt; Chlamydia trachomatis

&lt;400&gt; 325

Met	His	His	His	His	His	His	Thr	Ala	Ala	Ser	Asp	Asn	Phe	Gln	Leu
1					5				10					15	

Ser	Gln	Gly	Gly	Gln	Gly	Phe	Ala	Ile	Pro	Ile	Gly	Gln	Ala	Met	Ala
		20						25					30		
Ile	Ala	Gly	Gln	Ile	Lys	Leu	Pro	Thr	Val	His	Ile	Gly	Pro	Thr	Ala
		35					40					45			
Phe	Leu	Gly	Leu	Gly	Val	Val	Asp	Asn	Asn	Gly	Asn	Gly	Ala	Arg	Val
	50					55					60				
Gln	Arg	Val	Val	Gly	Ser	Ala	Pro	Ala	Ala	Ser	Leu	Gly	Ile	Ser	Thr
65				70						75				80	
Gly	Asp	Val	Ile	Thr	Ala	Val	Asp	Gly	Ala	Pro	Ile	Asn	Ser	Ala	Thr
				85					90					95	
Ala	Met	Ala	Asp	Ala	Leu	Asn	Gly	His	His	Pro	Gly	Asp	Val	Ile	Ser
			100					105					110		
Val	Thr	Trp	Gln	Thr	Lys	Ser	Gly	Gly	Thr	Arg	Thr	Gly	Asn	Val	Thr
		115					120					125			
Leu	Ala	Glu	Gly	Pro	Pro	Ala	Glu	Phe	Cys	Arg	Tyr	Pro	Ser	His	Trp
	130					135					140				
Arg	Pro	Leu	Met	Pro	Phe	Ser	Leu	Arg	Ser	Thr	Ser	Phe	Cys	Phe	Leu
145					150					155					160
Ala	Cys	Leu	Cys	Ser	Tyr	Ser	Tyr	Gly	Phe	Ala	Ser	Ser	Pro	Gln	Val
				165					170					175	
Leu	Thr	Pro	Asn	Val	Thr	Thr	Pro	Phe	Lys	Gly	Asp	Asp	Val	Tyr	Leu
			180					185					190		
Asn	Gly	Asp	Cys	Ala	Phe	Val	Asn	Val	Tyr	Ala	Gly	Ala	Glu	Asn	Gly
		195					200					205			
Ser	Ile	Ile	Ser	Ala	Asn	Gly	Asp	Asn	Leu	Thr	Ile	Thr	Gly	Gln	Asn
	210					215					220				
His	Thr	Leu	Ser	Phe	Thr	Asp	Ser	Gln	Gly	Pro	Val	Leu	Gln	Asn	Tyr
225					230					235					240
Ala	Phe	Ile	Ser	Ala	Gly	Glu	Thr	Leu	Thr	Leu	Lys	Asp	Phe	Ser	Ser
				245					250					255	
Leu	Met	Phe	Ser	Lys	Asn	Val	Ser	Cys	Gly	Glu	Lys	Gly	Met	Ile	Ser
			260					265					270		
Gly	Lys	Thr	Val	Ser	Ile	Ser	Gly	Ala	Gly	Glu	Val	Ile	Phe	Trp	Asp
		275					280					285			
Asn	Ser	Val	Gly	Tyr	Ser	Pro	Leu	Ser	Ile	Val	Pro	Ala	Ser	Thr	Pro
	290					295					300				
Thr	Pro	Pro	Ala	Pro	Ala	Pro	Ala	Pro	Ala	Ala	Ser	Ser	Ser	Leu	Ser
305					310					315					320
Pro	Thr	Val	Ser	Asp	Ala	Arg	Lys	Gly	Ser	Ile	Phe	Ser	Val	Glu	Thr
				325					330					335	
Ser	Leu	Glu	Ile	Ser	Gly	Val	Lys	Lys	Gly	Val	Met	Phe	Asp	Asn	Asn
			340					345					350		
Ala	Gly	Asn	Phe	Gly	Thr	Val	Phe	Arg	Gly	Asn	Ser	Asn	Asn	Asn	Ala
		355					360					365			
Gly	Ser	Gly	Gly	Ser	Gly	Ser	Ala	Thr	Thr	Pro	Ser	Phe	Thr	Val	Lys
	370					375					380				
Asn	Cys	Lys	Gly	Lys	Val	Ser	Phe	Thr	Asp	Asn	Val	Ala	Ser	Cys	Gly
385					390					395					400
Gly	Gly	Val	Val	Tyr	Lys	Gly	Thr	Val	Leu	Phe	Lys	Asp	Asn	Glu	Gly
				405					410					415	
Gly	Ile	Phe	Phe	Arg	Gly	Asn	Thr	Ala	Tyr	Asp	Asp	Leu	Gly	Ile	Leu
			420					425					430		
Ala	Ala	Thr	Ser	Arg	Asp	Gln	Asn	Thr	Glu	Thr	Gly	Gly	Gly	Gly	Gly
		435					440					445			
Val	Ile	Cys	Ser	Pro	Asp	Asp	Ser	Val	Lys	Phe	Glu	Gly	Asn	Lys	Gly
	450					455					460				
Ser	Ile	Val	Phe	Asp	Tyr	Asn	Phe	Ala	Lys	Gly	Arg	Gly	Gly	Ser	Ile
465					470					475					480
Leu	Thr	Lys	Glu	Phe	Ser	Leu	Val	Ala	Asp	Asp	Ser	Val	Val	Phe	Ser
				485					490					495	
Asn	Asn	Thr	Ala	Glu	Lys	Gly	Gly	Gly	Ala	Ile	Tyr	Ala	Pro	Thr	Ile



[illegible]

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<210> 326
<211> 40
<212> DNA
<213> Chlamydia trachomatis
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<210> 327
<211> 33
<212> DNA
<213> Chlamydia trachomatis
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<400> 327  
gagagcggcc gcttaaaaga ttctattcaa gcc 33

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<210> 328
<211> 2148
<212> DNA
<213> Chlymadia trachomatis
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ggcgcacgag	tccaacgcgt	ggtcggggagc	gctccggcgg	caagtctcgg	catctccacc	240
ggcgacgtga	tcaccgcggt	cgacggcgct	ccgatcaact	cggccaccgc	gatggcggac	300
gcgccttaacg	ggcatcatcc	cggtagcgtc	atctcggtag	cctggcaaac	caagtcgggc	360
ggcacgcgta	cagggaaacgt	gacattggcc	gagggacccc	cggccgaatt	ctgcagatat	420
ccatcacact	ggcggccgct	cgatcctgta	gtacaaaata	attcagcagc	gggtgcatcg	480
acaccatcac	catcttcttc	ttctatgcct	ggtgctgtca	cgattaatca	gtccggtaat	540
ggatctgtga	tttttaccgc	cgagtcattg	actccttcag	aaaaacttca	agttcttaac	600
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gaggtctcgt	tgtctgcctg	tgcagggtgc	gcaaataata	attatacttg	tacagtatct	780
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gcggatggaa	cagttactgt	taacagcggc	tctacttttag	acctagtgat	ggagaatgag	900
gcagaggtct	atgataatcc	gctttttgtg	ggatcgctga	caattccttt	tgttactcta	960
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gctgcgcact	atgggtatca	aggctcttgg	tctgcagatt	ggacgaaacc	gcctctggct	1080
cctgatgcta	aggggatggt	acctccta	accaataaca	ctctgtatct	gacatggaga	1140
cctgcttcga	attacggtga	atatcgactg	gatcctcaga	gaaagggaga	actagtagacc	1200
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aagacaccta tacaaggatc cccgctggca cggcatgcct tcttcttaga agtgcagatg 2040
actttgtata ttcatcattt tggaagagcc tatatgaact attcattaga tgctcgtcgt 2100
cgacaaaccg cacattttgt atctatgggc ttgaatagaa tcttttaa 2148

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&lt;210&gt; 329

&lt;211&gt; 715

&lt;212&gt; PRT

&lt;213&gt; Chlamydia trachomatis

&lt;400&gt; 329

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Met His His His His His His Thr Ala Ala Ser Asp Asn Phe Gln Leu
 1          5          10          15
Ser Gln Gly Gly Gln Gly Phe Ala Ile Pro Ile Gly Gln Ala Met Ala
 20          25          30
Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala
 35          40          45
Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
 50          55          60
Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
 65          70          75          80
Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
 85          90          95
Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser
100          105          110
Val Thr Trp Gln Thr Lys Ser Gly Gly Thr Arg Thr Gly Asn Val Thr
115          120          125
Leu Ala Glu Gly Pro Pro Ala Glu Phe Cys Arg Tyr Pro Ser His Trp
130          135          140
Arg Pro Leu Asp Pro Val Val Gln Asn Asn Ser Ala Ala Gly Ala Ser
145          150          155          160
Thr Pro Ser Pro Ser Ser Ser Met Pro Gly Ala Val Thr Ile Asn
165          170          175
Gln Ser Gly Asn Gly Ser Val Ile Phe Thr Ala Glu Ser Leu Thr Pro
180          185          190
Ser Glu Lys Leu Gln Val Leu Asn Ser Thr Ser Asn Phe Pro Gly Ala
195          200          205
Leu Thr Val Ser Gly Gly Glu Leu Val Val Thr Glu Gly Ala Thr Leu
210          215          220
Thr Thr Gly Thr Ile Thr Ala Thr Ser Gly Arg Val Thr Leu Gly Ser
225          230          235          240
Gly Ala Ser Leu Ser Ala Val Ala Gly Ala Ala Asn Asn Asn Tyr Thr
245          250          255
Cys Thr Val Ser Lys Leu Gly Ile Asp Leu Glu Ser Phe Leu Thr Pro
260          265          270
Asn Tyr Lys Thr Ala Ile Leu Gly Ala Asp Gly Thr Val Thr Val Asn
275          280          285
Ser Gly Ser Thr Leu Asp Leu Val Met Glu Asn Glu Ala Glu Val Tyr
290          295          300
Asp Asn Pro Leu Phe Val Gly Ser Leu Thr Ile Pro Phe Val Thr Leu

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305					310					315				320
Ser	Ser	Ser	Ser	Ala	Ser	Asn	Gly	Val	Thr	Lys	Asn	Ser	Val	Thr
				325					330					335
Asn	Asp	Ala	Asp	Ala	Ala	His	Tyr	Gly	Tyr	Gln	Gly	Ser	Trp	Ser
				340					345					350
Asp	Trp	Thr	Lys	Pro	Pro	Leu	Ala	Pro	Asp	Ala	Lys	Gly	Met	Val
				355					360					365
Pro	Asn	Thr	Asn	Asn	Thr	Leu	Tyr	Leu	Thr	Trp	Arg	Pro	Ala	Ser
														380
Tyr	Gly	Glu	Tyr	Arg	Leu	Asp	Pro	Gln	Arg	Lys	Gly	Glu	Leu	Val
														400
385					390					395				
Asn	Ser	Leu	Trp	Val	Ala	Gly	Ser	Ala	Leu	Arg	Thr	Phe	Thr	Asn
				405										415
Leu	Lys	Glu	His	Tyr	Val	Ser	Arg	Asp	Val	Gly	Phe	Val	Ala	Ser
				420										430
His	Ala	Leu	Gly	Asp	Tyr	Ile	Leu	Asn	Tyr	Thr	Gln	Asp	Asp	Arg
				435										445
Gly	Phe	Leu	Ala	Arg	Tyr	Gly	Gly	Phe	Gln	Ala	Thr	Ala	Ala	Ser
														460
450					455									
Tyr	Glu	Asn	Gly	Ser	Ile	Phe	Gly	Val	Ala	Phe	Gly	Gln	Leu	Tyr
														480
465					470					475				
Gln	Thr	Lys	Ser	Arg	Met	Tyr	Tyr	Ser	Lys	Asp	Ala	Gly	Asn	Met
														495
				485					490					
Met	Leu	Ser	Cys	Phe	Gly	Arg	Ser	Tyr	Val	Asp	Ile	Lys	Gly	Thr
				500					505					510
Thr	Val	Met	Tyr	Trp	Glu	Thr	Ala	Tyr	Gly	Tyr	Ser	Val	His	Arg
				515										525
His	Thr	Gln	Tyr	Phe	Asn	Asp	Lys	Thr	Gln	Lys	Phe	Asp	His	Ser
														540
530					535									
Cys	His	Trp	His	Asn	Asn	Asn	Tyr	Tyr	Ala	Phe	Val	Gly	Ala	Glu
														560
545				550					555					
Asn	Phe	Leu	Glu	Tyr	Cys	Ile	Pro	Thr	Arg	Gln	Leu	Ala	Arg	Asp
														575
				565					570					
Glu	Leu	Thr	Gly	Phe	Met	Arg	Phe	Glu	Met	Ala	Gly	Gly	Trp	Ser
														590
				580					585					
Ser	Thr	Arg	Glu	Thr	Gly	Ser	Leu	Thr	Arg	Tyr	Phe	Ala	Arg	Gly
														605
				595										
Gly	His	Asn	Met	Ser	Leu	Pro	Ile	Gly	Ile	Val	Ala	His	Ala	Val
														620
				610										
His	Val	Arg	Arg	Ser	Pro	Pro	Ser	Lys	Leu	Thr	Leu	Asn	Met	Gly
														640
625				630					635					
Arg	Pro	Asp	Ile	Trp	Arg	Val	Thr	Pro	His	Cys	Asn	Met	Glu	Ile
														655
				645					650					
Ala	Asn	Gly	Val	Lys	Thr	Pro	Ile	Gln	Gly	Ser	Pro	Leu	Ala	Arg
														670
				660					665					
Ala	Phe	Phe	Leu	Glu	Val	His	Asp	Thr	Leu	Tyr	Ile	His	His	Phe
														685
				675					680					
Arg	Ala	Tyr	Met	Asn	Tyr	Ser	Leu	Asp	Ala	Arg	Arg	Arg	Gln	Thr
														700
				690					695					
His	Phe	Val	Ser	Met	Gly	Leu	Asn	Arg	Ile	Phe				
														715
705					710					715				

&lt;210&gt; 330

&lt;211&gt; 38

&lt;212&gt; DNA

&lt;213&gt; Chlymadia trachomatis

&lt;400&gt; 330

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38

&lt;210&gt; 331

<211> 34  
 <212> DNA  
 <213> Chlymadia trachomatis

<400> 331  
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<210> 332  
 <211> 1557  
 <212> DNA  
 <213> Chlymadia trachomatis

<400> 332  
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 accgttcata tcgggcctac cgccttcctc ggcttgggtg ttgtcgacaa caacggcaac 180  
 ggcgacgag tccaacgcgt ggtcgggagc gctccggcgg caagtctcgg catctccacc 240  
 ggcgacgtga tcaccgcggt cgacggcgct ccgatcaact cggccaccgc gatggcggac 300  
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 ccatcacact ggcgccgct catgaaatgg ctgtcagcta ctgcggtgtt tgctgctgtt 480  
 ctcccctcag tttcagggtt ttgcttccca gaacctaaag aattaaattt ctctcgcgta 540  
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 cccacgaact caaactcctc tagctctagc ggagaaactg cttccgtttc tgaggatagt 720  
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 ggagttttgt cctttatgac acgatcagga acagaagggt ccttaactct gtctgagata 840  
 aaaatgactg gtgaaggcgg tgctatcttc tctcaaggag agctgctatt tacagatctg 900  
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 gatacagaaa catcaactcc ctctcataag ccaggatctg ggggagctat ctatgctaaa 1260  
 ggcgacctta ctatcgaga ctctcaagag gtactattct caataataaa agctactaaa 1320  
 gatggaggag cgatctttgc tgagaaagat gtttctttcg agaataattac atcatataaa 1380  
 gtacaaacta acggtgctga agaaaaggga ggagctatct atgctaaagg tgacctctca 1440  
 attcaatctt ctaaacagag tctttttaat tctaactaca gtaaacaagg tgggggggct 1500  
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<210> 333  
 <211> 518  
 <212> PRT  
 <213> Chlymadia trachomatis

<400> 333  
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 Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala  
 35 40 45  
 Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val  
 50 55 60  
 Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr  
 65 70 75 80  
 Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr  
 85 90 95  
 Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser  
 100 105 110  
 Val Thr Trp Gln Thr Lys Ser Gly Gly Thr Arg Thr Gly Asn Val Thr

148

115	120	125
Leu Ala Glu Gly Pro Pro Ala Glu Phe Cys Arg Tyr Pro Ser His Trp		
130	135	140
Arg Pro Leu Met Lys Trp Leu Ser Ala Thr Ala Val Phe Ala Ala Val		
145	150	155
Leu Pro Ser Val Ser Gly Phe Cys Phe Pro Glu Pro Lys Glu Leu Asn		
165	170	175
Phe Ser Arg Val Glu Thr Ser Ser Ser Thr Thr Phe Thr Glu Thr Ile		
180	185	190
Gly Glu Ala Gly Ala Glu Tyr Ile Val Ser Gly Asn Ala Ser Phe Thr		
195	200	205
Lys Phe Thr Asn Ile Pro Thr Thr Asp Thr Thr Thr Pro Thr Asn Ser		
210	215	220
Asn Ser Ser Ser Ser Ser Gly Glu Thr Ala Ser Val Ser Glu Asp Ser		
225	230	235
Asp Ser Thr Thr Thr Thr Pro Asp Pro Lys Gly Gly Gly Ala Phe Tyr		
245	250	255
Asn Ala His Ser Gly Val Leu Ser Phe Met Thr Arg Ser Gly Thr Glu		
260	265	270
Gly Ser Leu Thr Leu Ser Glu Ile Lys Met Thr Gly Glu Gly Gly Ala		
275	280	285
Ile Phe Ser Gln Gly Glu Leu Leu Phe Thr Asp Leu Thr Ser Leu Thr		
290	295	300
Ile Gln Asn Asn Leu Ser Gln Leu Ser Gly Gly Ala Ile Phe Gly Gly		
305	310	315
Ser Thr Ile Ser Leu Ser Gly Ile Thr Lys Ala Thr Phe Ser Cys Asn		
325	330	335
Ser Ala Glu Val Pro Ala Pro Val Lys Lys Pro Thr Glu Pro Lys Ala		
340	345	350
Gln Thr Ala Ser Glu Thr Ser Gly Ser Ser Ser Ser Ser Gly Asn Asp		
355	360	365
Ser Val Ser Ser Pro Ser Ser Ser Arg Ala Glu Pro Ala Ala Ala Asn		
370	375	380
Leu Gln Ser His Phe Ile Cys Ala Thr Ala Thr Pro Ala Ala Gln Thr		
385	390	395
Asp Thr Glu Thr Ser Thr Pro Ser His Lys Pro Gly Ser Gly Gly Ala		
405	410	415
Ile Tyr Ala Lys Gly Asp Leu Thr Ile Ala Asp Ser Gln Glu Val Leu		
420	425	430
Phe Ser Ile Asn Lys Ala Thr Lys Asp Gly Gly Ala Ile Phe Ala Glu		
435	440	445
Lys Asp Val Ser Phe Glu Asn Ile Thr Ser Leu Lys Val Gln Thr Asn		
450	455	460
Gly Ala Glu Glu Lys Gly Gly Ala Ile Tyr Ala Lys Gly Asp Leu Ser		
465	470	475
Ile Gln Ser Ser Lys Gln Ser Leu Phe Asn Ser Asn Tyr Ser Lys Gln		
485	490	495
Gly Gly Gly Ala Leu Tyr Val Glu Gly Gly Ile Asn Phe Gln Asp Leu		
500	505	510
Glu Glu Ile Arg Ile Lys		
515		

&lt;210&gt; 334

&lt;211&gt; 37

&lt;212&gt; DNA

&lt;213&gt; Chlymadia trachomatis

&lt;400&gt; 334

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37

&lt;210&gt; 335

<211> 39  
 <212> DNA  
 <213> Chlamydia trachomatis

<400> 335  
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39

<210> 336  
 <211> 1758  
 <212> DNA  
 <213> Chlamydia trachomatis

<400> 336  
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 accgttcata tcgggcctac cgccttcctc ggcttgggtg ttgtcgacaa caacggcaac 180  
 ggcgcacgag tccaacgcgt ggtcgggagc gtcctggcgg caagtctcgg catctccacc 240  
 ggcgacgtga tcaccgcggt cgacggcgct ccgatcaact cggccaccgc gatggcggac 300  
 gcgcttaacg ggcacatcc cggtgacgtc atctcgggtga cctggcaaac caagtcgggc 360  
 ggcacgcgta caggaacgt gacattggc gagggacccc cggccgaatt ctgcagatat 420  
 ccatcacact ggccggcgct cggtgacctc tcaattcaat cttctaaaca gagtcttttt 480  
 aattctaact acagtaaaca aggtgggggg gctctatatg ttgaaggagg tataaacttc 540  
 caagatcttg aagaaattcg cattaagtac aataaagctg gaacgttcga aacaaaaaaaa 600  
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 tcctctcctc aatctggttc tggagcaact acagtctccg actcaggaga ctctagctct 720  
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<210> 337  
 <211> 585  
 <212> PRT  
 <213> Chlamydia trachomatis

<400> 337  
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 35 40 45  
 Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val  
 50 55 60  
 Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr  
 65 70 75 80  
 Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr

				85				90				95			
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			100					105					110		
Val	Thr	Trp	Gln	Thr	Lys	Ser	Gly	Gly	Thr	Arg	Thr	Gly	Asn	Val	Thr
		115					120					125			
Leu	Ala	Glu	Gly	Pro	Pro	Ala	Glu	Phe	Cys	Arg	Tyr	Pro	Ser	His	Trp
		130				135					140				
Arg	Pro	Leu	Gly	Asp	Leu	Ser	Ile	Gln	Ser	Ser	Lys	Gln	Ser	Leu	Phe
145					150					155					160
Asn	Ser	Asn	Tyr	Ser	Lys	Gln	Gly	Gly	Gly	Ala	Leu	Tyr	Val	Glu	Gly
				165					170					175	
Gly	Ile	Asn	Phe	Gln	Asp	Leu	Glu	Glu	Ile	Arg	Ile	Lys	Tyr	Asn	Lys
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Ala	Gly	Thr	Phe	Glu	Thr	Lys	Lys	Ile	Thr	Leu	Pro	Ser	Leu	Lys	Ala
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Gln	Ala	Ser	Ala	Gly	Asn	Ala	Asp	Ala	Trp	Ala	Ser	Ser	Ser	Pro	Gln
		210				215					220				
Ser	Gly	Ser	Gly	Ala	Thr	Thr	Val	Ser	Asp	Ser	Gly	Asp	Ser	Ser	Ser
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Gly	Gly	Leu	Tyr	Thr	Asp	Lys	Asn	Leu	Ser	Ile	Thr	Asn	Ile	Thr	Gly
			260					265					270		
Ile	Ile	Glu	Ile	Ala	Asn	Asn	Lys	Ala	Thr	Asp	Val	Gly	Gly	Gly	Ala
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Tyr	Val	Lys	Gly	Thr	Leu	Thr	Cys	Glu	Asn	Ser	His	Arg	Leu	Gln	Phe
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Leu	Lys	Asn	Ser	Ser	Asp	Lys	Gln	Gly	Gly	Gly	Ile	Tyr	Gly	Glu	Asp
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Asn	Ile	Thr	Leu	Ser	Asn	Leu	Thr	Gly	Lys	Thr	Leu	Phe	Gln	Glu	Asn
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Thr	Ala	Lys	Glu	Glu	Gly	Gly	Gly	Leu	Phe	Ile	Lys	Gly	Thr	Asp	Lys
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Ala	Leu	Thr	Met	Thr	Gly	Leu	Asp	Ser	Phe	Cys	Leu	Ile	Asn	Asn	Thr
		355					360					365			
Ser	Glu	Lys	His	Gly	Gly	Gly	Ala	Phe	Val	Thr	Lys	Glu	Ile	Ser	Gln
	370					375					380				
Thr	Tyr	Thr	Ser	Asp	Val	Glu	Thr	Ile	Pro	Gly	Ile	Thr	Pro	Val	His
385					390					395					400
Gly	Glu	Thr	Val	Ile	Thr	Gly	Asn	Lys	Ser	Thr	Gly	Gly	Asn	Gly	Gly
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Gly	Val	Cys	Thr	Lys	Arg	Leu	Ala	Leu	Ser	Asn	Leu	Gln	Ser	Ile	Ser
			420					425					430		
Ile	Ser	Gly	Asn	Ser	Ala	Ala	Glu	Asn	Gly	Gly	Gly	Ala	His	Thr	Cys
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<211> 38  
<212> DNA  
<213> Chlamydai trachomatis

<400> 338  
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<210> 339  
<211> 35  
<212> DNA  
<213> Chlamydia trachomatis

<400> 339  
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<210> 340  
<211> 1965  
<212> DNA  
<213> Chlamydia trachomatis

<400> 340  
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accgttcata tcgggcctac cgcttcctc ggcttgggtg ttgtcgacaa caacggcaac 180  
ggcgacagag tccaacgcgt ggtcgggagc gctcggcgcg caagtctcgg catctccacc 240  
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acagagaacc ttggtgggaa agaaggtgga ggcttacatg ctaaaaactgt aaatatctct 600  
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gcaacaacag cttcagcacc tgctgcagct gctgcttccc tacaagcagc cgcagcagcc 720  
gcaccatcat ctccagcaac accaacttat tcagggtgtag taggaggagc tatctatgga 780  
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<210> 341  
<211> 654



&lt;212&gt; PRT

&lt;213&gt; Chlamydia trachomatis

&lt;400&gt; 341

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Ile	Ala	Gly	Gln	Ile	Lys	Leu	Pro	Thr	Val	His	Ile	Gly	Pro	Thr	Ala
		35					40					45			
Phe	Leu	Gly	Leu	Gly	Val	Val	Asp	Asn	Asn	Gly	Asn	Gly	Ala	Arg	Val
	50					55					60				
Gln	Arg	Val	Val	Gly	Ser	Ala	Pro	Ala	Ala	Ser	Leu	Gly	Ile	Ser	Thr
65					70					75					80
Gly	Asp	Val	Ile	Thr	Ala	Val	Asp	Gly	Ala	Pro	Ile	Asn	Ser	Ala	Thr
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Ala	Met	Ala	Asp	Ala	Leu	Asn	Gly	His	His	Pro	Gly	Asp	Val	Ile	Ser
			100					105					110		
Val	Thr	Trp	Gln	Thr	Lys	Ser	Gly	Gly	Thr	Arg	Thr	Gly	Asn	Val	Thr
		115					120					125			
Leu	Ala	Glu	Gly	Pro	Pro	Ala	Glu	Phe	Cys	Arg	Tyr	Pro	Ser	His	Trp
	130					135					140				
Arg	Pro	Leu	Asp	Gln	Leu	Asn	Ile	Ser	Glu	Asn	Ser	Ala	Thr	Glu	Ile
145					150					155					160
Gly	Gly	Gly	Ile	Cys	Cys	Lys	Glu	Ser	Leu	Glu	Leu	Asp	Ala	Leu	Val
				165					170					175	
Ser	Leu	Ser	Val	Thr	Glu	Asn	Leu	Val	Gly	Lys	Glu	Gly	Gly	Gly	Leu
			180					185					190		
His	Ala	Lys	Thr	Val	Asn	Ile	Ser	Asn	Leu	Lys	Ser	Gly	Phe	Ser	Phe
		195					200					205			
Ser	Asn	Asn	Lys	Ala	Asn	Ser	Ser	Ser	Thr	Gly	Val	Ala	Thr	Thr	Ala
	210					215					220				
Ser	Ala	Pro	Ala	Ala	Ala	Ala	Ala	Ser	Leu	Gln	Ala	Ala	Ala	Ala	Ala
225					230					235					240
Ala	Pro	Ser	Ser	Pro	Ala	Thr	Pro	Thr	Tyr	Ser	Gly	Val	Val	Gly	Gly
				245					250					255	
Ala	Ile	Tyr	Gly	Glu	Lys	Val	Thr	Phe	Ser	Gln	Cys	Ser	Gly	Thr	Cys
			260					265					270		
Gln	Phe	Ser	Gly	Asn	Gln	Ala	Ile	Asp	Asn	Asn	Pro	Ser	Gln	Ser	Ser
		275					280					285			
Leu	Asn	Val	Gln	Gly	Gly	Ala	Ile	Tyr	Ala	Lys	Thr	Ser	Leu	Ser	Ile
	290					295					300				
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305					310					315					320
Ser	Thr	Gly	Lys	Ser	Gln	Thr	Thr	Gly	Gln	Ile	Ala	Gly	Gly	Ala	Ile
				325					330					335	
Tyr	Ser	Pro	Thr	Val	Thr	Leu	Asn	Cys	Pro	Ala	Thr	Phe	Ser	Asn	Asn
			340					345					350		
Thr	Ala	Ser	Ile	Ala	Thr	Pro	Lys	Thr	Ser	Ser	Glu	Asp	Gly	Ser	Ser
		355					360					365			
Gly	Asn	Ser	Ile	Lys	Asp	Thr	Ile	Gly	Gly	Ala	Ile	Ala	Gly	Thr	Ala
	370					375					380				
Ile	Thr	Leu	Ser	Gly	Val	Ser	Arg	Phe	Ser	Gly	Asn	Thr	Ala	Asp	Leu
385					390					395					400
Gly	Ala	Ala	Ile	Gly	Thr	Leu	Ala	Asn	Ala	Asn	Thr	Pro	Ser	Ala	Thr
				405					410					415	
Ser	Gly	Ser	Gln	Asn	Ser	Ile	Thr	Glu	Lys	Ile	Thr	Leu	Glu	Asn	Gly
			420					425				430			
Ser	Phe	Ile	Phe	Glu	Arg	Asn	Gln	Ala	Asn	Lys	Arg	Gly	Ala	Ile	Tyr
		435					440					445			
Ser	Pro	Ser	Val	Ser	Ile	Lys	Gly	Asn	Asn	Ile	Thr	Phe	Asn	Gln	Asn

450		455		460
Thr Ser Thr His Asp Gly	Ser Ala Ile Tyr Phe	Thr Lys Asp Ala Thr		
465	470	475	480	
Ile Glu Ser Leu Gly	Ser Val Leu Phe Thr Gly	Asn Asn Val Thr Ala		
	485	490	495	
Thr Gln Ala Ser Ser	Ala Thr Ser Gly Gln Asn	Thr Asn Thr Ala Asn		
	500	505	510	
Tyr Gly Ala Ala Ile Phe	Gly Asp Pro Gly Thr	Thr Gln Ser Ser Gln		
	515	520	525	
Thr Asp Ala Ile Leu Thr	Leu Leu Ala Ser Ser	Gly Asn Ile Thr Phe		
	530	535	540	
Ser Asn Asn Ser Leu Gln	Asn Asn Gln Gly Asp	Thr Pro Ala Ser Lys		
545	550	555	560	
Phe Cys Ser Ile Ala Gly	Tyr Val Lys Leu Ser	Leu Gln Ala Ala Lys		
	565	570	575	
Gly Lys Thr Ile Ser Phe	Phe Asp Cys Val His	Thr Ser Thr Lys Lys		
	580	585	590	
Thr Gly Ser Thr Gln Asn	Val Tyr Glu Thr Leu	Asp Ile Asn Lys Glu		
	595	600	605	
Glu Asn Ser Asn Pro Tyr	Thr Gly Thr Ile Val	Phe Ser Ser Glu Leu		
	610	615	620	
His Glu Asn Lys Ser Tyr	Ile Pro Gln Asn Ala	Ile Leu His Asn Gly		
625	630	635	640	
Thr Leu Val Leu Lys Glu	Lys Thr Glu Leu His	Val Val Ser		
	645	650		

&lt;210&gt; 342

&lt;211&gt; 36

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis

&lt;400&gt; 342

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36

&lt;210&gt; 343

&lt;211&gt; 35

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis

&lt;400&gt; 343

gagagcggcc gcttagaaga tcatgcgagc accgc

35

&lt;210&gt; 344

&lt;211&gt; 2103

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis

&lt;400&gt; 344

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&lt;210&gt; 345

&lt;211&gt; 700

&lt;212&gt; PRT

&lt;213&gt; Chlamydia trachomatis

&lt;400&gt; 345

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Ile Ala Gly Gln Ile Lys Leu Pro Thr Val His Ile Gly Pro Thr Ala
 35          40          45
Phe Leu Gly Leu Gly Val Val Asp Asn Asn Gly Asn Gly Ala Arg Val
 50          55          60
Gln Arg Val Val Gly Ser Ala Pro Ala Ala Ser Leu Gly Ile Ser Thr
 65          70          75          80
Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr
 85          90          95
Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser
100          105          110
Val Thr Trp Gln Thr Lys Ser Gly Gly Thr Arg Thr Gly Asn Val Thr
115          120          125
Leu Ala Glu Gly Pro Pro Ala Glu Phe Cys Arg Tyr Pro Ser His Trp
130          135          140
Arg Pro Leu Gly Thr Ile Val Phe Ser Ser Glu Leu His Glu Asn Lys
145          150          155          160
Ser Tyr Ile Pro Gln Asn Ala Ile Leu His Asn Gly Thr Leu Val Leu
165          170          175
Lys Glu Lys Thr Glu Leu His Val Val Ser Phe Glu Gln Lys Glu Gly
180          185          190
Ser Lys Leu Ile Met Glu Pro Gly Ala Val Leu Ser Asn Gln Asn Ile
195          200          205
Ala Asn Gly Ala Leu Ala Ile Asn Gly Leu Thr Ile Asp Leu Ser Ser
210          215          220
Met Gly Thr Pro Gln Ala Gly Glu Ile Phe Ser Pro Pro Glu Leu Arg
225          230          235          240
Ile Val Ala Thr Thr Ser Ser Ala Ser Gly Gly Ser Gly Val Ser Ser

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Gly	Asp	Leu	Thr	Leu	Ile	Asp	Pro	Asn	Gly	Asn	Phe	Tyr	Gln	Asn	Pro		
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Met	Leu	Gly	Ser	Asp	Leu	Asp	Val	Pro	Leu	Ile	Lys	Leu	Pro	Thr	Asn		
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Thr	Ser	Asp	Val	Gln	Val	Tyr	Asp	Leu	Thr	Leu	Ser	Gly	Asp	Leu	Phe		
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Pro	Gln	Lys	Gly	Tyr	Met	Gly	Thr	Trp	Thr	Leu	Asp	Ser	Asn	Pro	Gln		
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Thr	Gly	Lys	Leu	Gln	Ala	Arg	Trp	Thr	Phe	Asp	Thr	Tyr	Arg	Arg	Trp		
		355					360					365					
Val	Tyr	Ile	Pro	Arg	Asp	Asn	His	Phe	Tyr	Ala	Asn	Ser	Ile	Leu	Gly		
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			420					425					430				
Glu	Phe	Ser	Tyr	Tyr	Ser	Arg	Gly	Thr	Ser	Val	Ala	Ile	Asp	Ala	Lys		
		435					440					445					
Pro	Arg	Gln	Asp	Phe	Ile	Leu	Gly	Ala	Ala	Phe	Ser	Lys	Ile	Val	Gly		
	450					455				460							
Lys	Thr	Lys	Ala	Ile	Lys	Lys	Met	His	Asn	Tyr	Phe	His	Lys	Gly	Ser		
465					470					475					480		
Glu	Tyr	Ser	Tyr	Gln	Ala	Ser	Val	Tyr	Gly	Gly	Lys	Phe	Leu	Tyr	Phe		
				485					490					495			
Leu	Leu	Asn	Lys	Gln	His	Gly	Trp	Ala	Leu	Pro	Phe	Leu	Ile	Gln	Gly		
		500						505					510				
Val	Val	Ser	Tyr	Gly	His	Ile	Lys	His	Asp	Thr	Thr	Thr	Leu	Tyr	Pro		
		515					520					525					
Ser	Ile	His	Glu	Arg	Asn	Lys	Gly	Asp	Trp	Glu	Asp	Leu	Gly	Trp	Leu		
	530				535					540							
Ala	Asp	Leu	Arg	Ile	Ser	Met	Asp	Leu	Lys	Glu	Pro	Ser	Lys	Asp	Ser		
545					550					555					560		
Ser	Lys	Arg	Ile	Thr	Val	Tyr	Gly	Glu	Leu	Glu	Tyr	Ser	Ser	Ile	Arg		
				565					570					575			
Gln	Lys	Gln	Phe	Thr	Glu	Ile	Asp	Tyr	Asp	Pro	Arg	His	Phe	Asp	Asp		
			580					585					590				
Cys	Ala	Tyr	Arg	Asn	Leu	Ser	Leu	Pro	Val	Gly	Cys	Ala	Val	Glu	Gly		
	595						600					605					
Ala	Ile	Met	Asn	Cys	Asn	Ile	Leu	Met	Tyr	Asn	Lys	Leu	Ala	Leu	Ala		
	610				615						620						
Tyr	Met	Pro	Ser	Ile	Tyr	Arg	Asn	Asn	Pro	Val	Cys	Lys	Tyr	Arg	Val		
625					630					635					640		
Leu	Ser	Ser	Asn	Glu	Ala	Gly	Gln	Val	Ile	Cys	Gly	Val	Pro	Thr	Arg		
			645					650					655				
Thr	Ser	Ala	Arg	Ala	Glu	Tyr	Ser	Thr	Gln	Leu	Tyr	Leu	Gly	Pro	Phe		
		660						665					670				
Trp	Thr	Leu	Tyr	Gly	Asn	Tyr	Thr	Ile	Asp	Val	Gly	Met	Tyr	Thr	Leu		
	675						680					685					
Ser	Gln	Met	Thr	Ser	Cys	Gly	Ala	Arg	Met	Ile	Phe						
	690					695					700						

&lt;210&gt; 346

&lt;211&gt; 37

&lt;212&gt; DNA

<213> Chlamydia trachomatis

<400> 346

gagagcggcc gctcatgaaa tttatgtcag ctactgc

37

<210> 347

<211> 37

<212> DNA

<213> Chlamydia trachomatis

<400> 347

gagagcggcc gcttaccctg taattccagt gatggtc

37

<210> 348

<211> 1464

<212> DNA

<213> Chlamydia trachomatis

<400> 348

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cagggattcg	ccattccgat	cgggcaggcg	atggcgatcg	cgggccagat	caagcttccc	120
accgttcata	tccgggcctac	cgccttcctc	ggcttgggtg	ttgtcgacaa	caacggcaac	180
ggcgacgag	tccaacgcgt	ggtcgggagc	gctccggcgg	caagtctcgg	catctccacc	240
ggcgacgtga	tcaccgcggt	cgacggcgct	ccgatcaact	cggccaccgc	gatggcggac	300
gcgcttaacg	ggcatcatcc	cggtgacgtc	atctcgggtga	cctggcaaac	caagtcgggc	360
ggcacgcgta	cagggaaacgt	gacattggcc	gagggacccc	cggccgaatt	ctgcagatat	420
ccatcacact	ggcggccgct	catgaaatth	atgtcagcta	ctgctgtatt	tgctgcagta	480
ctctcctccg	ttactgaggc	gagctcgatc	caagatcaaa	taaagaatac	cgactgcaat	540
gtagcaaaag	taggatattc	aacttctcaa	gcattttactg	atatgatgct	agcagacaac	600
acagagtatc	gagctgctga	tagtgtttca	ttctatgact	tttcgacatc	ttccggatta	660
cctagaaaac	atcttagtag	tagtagtgaa	gcttctccaa	cgacagaagg	agtgtcttca	720
tcttcatctg	gagaaaatac	tgagaattca	caagattcag	ctccctcttc	tggagaaaact	780
gataagaaaa	cagaagaaga	actagacaat	ggcggaatca	tttatgctag	agagaaaacta	840
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tttttcttcg	gagaagggtga	agttatcttt	gatcacagag	ttgccctcaa	aaacggagga	960
gctatttatg	gagagaaaga	ggtagtcttt	gaaaacataa	aatctctact	agtagaagta	1020
aatatctcgg	tcgagaaagg	gggtagcgct	tatgcaaaag	aacgagtatc	tttagaaaat	1080
gttaccgaag	caaccttctc	ctccaatggg	ggggaacaag	gtgggtgggtg	aatctattca	1140
gaacaagata	tgtaaatcag	tgattgcaac	aatgtacatt	tccaagggaa	tgctgcagga	1200
gcaacagcag	taaaacaatg	tctggatgaa	gaaatgatcg	tattgctcac	agaatgcgtt	1260
gatagcttat	ccgaagatac	actggatagc	actccagaaa	cggaacagac	taagtcaaat	1320
ggaaatcaag	atggttcgtc	tgaacaacaaa	gatacacaag	tatcagaatc	accagaatca	1380
actcctagcc	ccgacgatgt	tttaggtaaa	ggtgggtggta	tctatacaga	aaaatctttg	1440
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<210> 349

<211> 487

<212> PRT

<213> Chlamydia trachomatis

<400> 349

Met	His	His	His	His	His	His	Thr	Ala	Ala	Ser	Asp	Asn	Phe	Gln	Leu
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Ser	Gln	Gly	Gly	Gln	Gly	Phe	Ala	Ile	Pro	Ile	Gly	Gln	Ala	Met	Ala
		20						25					30		
Ile	Ala	Gly	Gln	Ile	Lys	Leu	Pro	Thr	Val	His	Ile	Gly	Pro	Thr	Ala
		35					40					45			
Phe	Leu	Gly	Leu	Gly	Val	Val	Asp	Asn	Asn	Gly	Asn	Gly	Ala	Arg	Val
	50					55					60				
Gln	Arg	Val	Val	Gly	Ser	Ala	Pro	Ala	Ala	Ser	Leu	Gly	Ile	Ser	Thr
65					70					75				80	

Gly Asp Val Ile Thr Ala Val Asp Gly Ala Pro Ile Asn Ser Ala Thr  
                   85                  90                  95  
 Ala Met Ala Asp Ala Leu Asn Gly His His Pro Gly Asp Val Ile Ser  
                   100                  105                  110  
 Val Thr Trp Gln Thr Lys Ser Gly Gly Thr Arg Thr Gly Asn Val Thr  
                   115                  120                  125  
 Leu Ala Glu Gly Pro Pro Ala Glu Phe Cys Arg Tyr Pro Ser His Trp  
                   130                  135                  140  
 Arg Pro Leu Met Lys Phe Met Ser Ala Thr Ala Val Phe Ala Ala Val  
                   145                  150                  155                  160  
 Leu Ser Ser Val Thr Glu Ala Ser Ser Ile Gln Asp Gln Ile Lys Asn  
                   165                  170                  175  
 Thr Asp Cys Asn Val Ser Lys Val Gly Tyr Ser Thr Ser Gln Ala Phe  
                   180                  185                  190  
 Thr Asp Met Met Leu Ala Asp Asn Thr Glu Tyr Arg Ala Ala Asp Ser  
                   195                  200                  205  
 Val Ser Phe Tyr Asp Phe Ser Thr Ser Ser Gly Leu Pro Arg Lys His  
                   210                  215                  220  
 Leu Ser Ser Ser Ser Glu Ala Ser Pro Thr Thr Glu Gly Val Ser Ser  
                   225                  230                  235                  240  
 Ser Ser Ser Gly Glu Asn Thr Glu Asn Ser Gln Asp Ser Ala Pro Ser  
                   245                  250                  255  
 Ser Gly Glu Thr Asp Lys Lys Thr Glu Glu Glu Leu Asp Asn Gly Gly  
                   260                  265                  270  
 Ile Ile Tyr Ala Arg Glu Lys Leu Thr Ile Ser Glu Ser Gln Asp Ser  
                   275                  280                  285  
 Leu Ser Asn Pro Ser Ile Glu Leu His Asp Asn Ser Phe Phe Phe Gly  
                   290                  295                  300  
 Glu Gly Glu Val Ile Phe Asp His Arg Val Ala Leu Lys Asn Gly Gly  
                   305                  310                  315                  320  
 Ala Ile Tyr Gly Glu Lys Glu Val Val Phe Glu Asn Ile Lys Ser Leu  
                   325                  330                  335  
 Leu Val Glu Val Asn Ile Ser Val Glu Lys Gly Gly Ser Val Tyr Ala  
                   340                  345                  350  
 Lys Glu Arg Val Ser Leu Glu Asn Val Thr Glu Ala Thr Phe Ser Ser  
                   355                  360                  365  
 Asn Gly Gly Glu Gln Gly Gly Gly Gly Ile Tyr Ser Glu Gln Asp Met  
                   370                  375                  380  
 Leu Ile Ser Asp Cys Asn Asn Val His Phe Gln Gly Asn Ala Ala Gly  
                   385                  390                  395                  400  
 Ala Thr Ala Val Lys Gln Cys Leu Asp Glu Glu Met Ile Val Leu Leu  
                   405                  410                  415  
 Thr Glu Cys Val Asp Ser Leu Ser Glu Asp Thr Leu Asp Ser Thr Pro  
                   420                  425                  430  
 Glu Thr Glu Gln Thr Lys Ser Asn Gly Asn Gln Asp Gly Ser Ser Glu  
                   435                  440                  445  
 Thr Lys Asp Thr Gln Val Ser Glu Ser Pro Glu Ser Thr Pro Ser Pro  
                   450                  455                  460  
 Asp Asp Val Leu Gly Lys Gly Gly Gly Ile Tyr Thr Glu Lys Ser Leu  
                   465                  470                  475                  480  
 Thr Ile Thr Gly Ile Thr Gly  
                   485

&lt;210&gt; 350

&lt;211&gt; 37

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis

&lt;400&gt; 350

gagagcggcc gctcgataca caagtatcag aatcacc

&lt;210&gt; 351

&lt;211&gt; 37

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis

&lt;400&gt; 351

gagagcggcc gcttaagagg acgatgagac actctcgc

37

&lt;210&gt; 352

&lt;211&gt; 1752

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis

&lt;400&gt; 352

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cagggattcg	ccattccgat	cgggcagggc	atggcgatcg	cgggccagat	caagcttccc	120
accgttcata	tcgggcctac	cgccttcctc	ggcttgggtg	ttgtcgacaa	caacggcaac	180
ggcgacacag	tccaacgcgt	ggtcgggagc	gctccggcgg	caagtctcgg	catctccacc	240
ggcgacgtga	tcacgcgggt	cgacggcgct	ccgatcaact	cggccaccgc	gatggcggac	300
gcgcttaacg	ggcatcatcc	cggtgacgtc	atctcgggtga	cctggcaaac	caagtcgggc	360
ggcacgcgta	cagggaaagt	gacattggcc	gagggacccc	cggccgaatt	ctgcagatat	420
ccatcacact	ggcggccgct	cgatacacia	gtatcagaat	caccagaatc	aactcctagc	480
cccgcacgat	tttttaggtaa	aggtgggtgg	atctatacag	aaaaatcttt	gaccatcact	540
ggaattacag	ggactataga	ttttgtcagt	aacatagcta	ccgattctgg	agcaggtgta	600
ttcactaaag	aaaacttgtc	ttgcaccaac	acgaatagcc	tacagttttt	gaaaaactcg	660
gcaggtcaac	atggaggagg	agcctacgtt	actcaaacca	tgtctgttac	taatacaact	720
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aaagggcacg	gtggtggtat	ctgcactaac	aaactttctt	tatctaattt	aaaaacgggtg	840
actctcacta	aaaactctgc	aaaggagtct	ggaggagcta	tttttacaga	tctagcgtct	900
ataccaacaa	cagatacccc	agagtcttct	acccctctct	cctcctcgcc	tgcaagcact	960
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cttgaacttt	cagggaaattc	atcccaggat	gtaggaggag	gtctctgttt	aactgaaagc	1260
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aacaatgagt	ctcaagacac	atcagatact	ggaaacgctg	aatctggaga	acaactacaa	1620
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gaaaacacag	acgaatcatc	tgatagccac	actgaggaaa	taactgacga	gagtggtctca	1740
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&lt;210&gt; 353

&lt;211&gt; 583

&lt;212&gt; PRT

&lt;213&gt; Chlamydia trachomatis

&lt;400&gt; 353

Met	His	His	His	His	His	His	Thr	Ala	Ala	Ser	Asp	Asn	Phe	Gln	Leu
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Ser	Gln	Gly	Gly	Gln	Gly	Phe	Ala	Ile	Pro	Ile	Gly	Gln	Ala	Met	Ala
		20						25					30		
Ile	Ala	Gly	Gln	Ile	Lys	Leu	Pro	Thr	Val	His	Ile	Gly	Pro	Thr	Ala
		35					40					45			
Phe	Leu	Gly	Leu	Gly	Val	Val	Asp	Asn	Asn	Gly	Asn	Gly	Ala	Arg	Val
	50					55					60				
Gln	Arg	Val	Val	Gly	Ser	Ala	Pro	Ala	Ala	Ser	Leu	Gly	Ile	Ser	Thr
65					70					75					80

Gly	Asp	Val	Ile	Thr	Ala	Val	Asp	Gly	Ala	Pro	Ile	Asn	Ser	Ala	Thr
			85						90					95	
Ala	Met	Ala	Asp	Ala	Leu	Asn	Gly	His	His	Pro	Gly	Asp	Val	Ile	Ser
			100					105					110		
Val	Thr	Trp	Gln	Thr	Lys	Ser	Gly	Gly	Thr	Arg	Thr	Gly	Asn	Val	Thr
		115					120					125			
Leu	Ala	Glu	Gly	Pro	Pro	Ala	Glu	Phe	Cys	Arg	Tyr	Pro	Ser	His	Trp
		130				135					140				
Arg	Pro	Leu	Asp	Thr	Gln	Val	Ser	Glu	Ser	Pro	Glu	Ser	Thr	Pro	Ser
145					150					155					160
Pro	Asp	Asp	Val	Leu	Gly	Lys	Gly	Gly	Gly	Ile	Tyr	Thr	Glu	Lys	Ser
			165					170						175	
Leu	Thr	Ile	Thr	Gly	Ile	Thr	Gly	Thr	Ile	Asp	Phe	Val	Ser	Asn	Ile
		180					185						190		
Ala	Thr	Asp	Ser	Gly	Ala	Gly	Val	Phe	Thr	Lys	Glu	Asn	Leu	Ser	Cys
		195					200					205			
Thr	Asn	Thr	Asn	Ser	Leu	Gln	Phe	Leu	Lys	Asn	Ser	Ala	Gly	Gln	His
		210				215					220				
Gly	Gly	Gly	Ala	Tyr	Val	Thr	Gln	Thr	Met	Ser	Val	Thr	Asn	Thr	Thr
225					230					235					240
Ser	Glu	Ser	Ile	Thr	Thr	Pro	Pro	Leu	Val	Gly	Glu	Val	Ile	Phe	Ser
			245					250						255	
Glu	Asn	Thr	Ala	Lys	Gly	His	Gly	Gly	Gly	Ile	Cys	Thr	Asn	Lys	Leu
			260				265						270		
Ser	Leu	Ser	Asn	Leu	Lys	Thr	Val	Thr	Leu	Thr	Lys	Asn	Ser	Ala	Lys
		275					280					285			
Glu	Ser	Gly	Gly	Ala	Ile	Phe	Thr	Asp	Leu	Ala	Ser	Ile	Pro	Thr	Thr
		290				295					300				
Asp	Thr	Pro	Glu	Ser	Ser	Thr	Pro	Ser	Ser	Ser	Ser	Pro	Ala	Ser	Thr
305					310					315					320
Pro	Glu	Val	Val	Ala	Ser	Ala	Lys	Ile	Asn	Arg	Phe	Phe	Ala	Ser	Thr
			325						330					335	
Ala	Glu	Pro	Ala	Ala	Pro	Ser	Leu	Thr	Glu	Ala	Glu	Ser	Asp	Gln	Thr
			340					345					350		
Asp	Gln	Thr	Glu	Thr	Ser	Asp	Thr	Asn	Ser	Asp	Ile	Asp	Val	Ser	Ile
		355					360					365			
Glu	Asn	Ile	Leu	Asn	Val	Ala	Ile	Asn	Gln	Asn	Thr	Ser	Ala	Lys	Lys
		370				375					380				
Gly	Gly	Ala	Ile	Tyr	Gly	Lys	Lys	Ala	Lys	Leu	Ser	Arg	Ile	Asn	Asn
385					390					395					400
Leu	Glu	Leu	Ser	Gly	Asn	Ser	Ser	Gln	Asp	Val	Gly	Gly	Gly	Leu	Cys
			405					410						415	
Leu	Thr	Glu	Ser	Val	Glu	Phe	Asp	Ala	Ile	Gly	Ser	Leu	Leu	Ser	His
		420					425						430		
Tyr	Asn	Ser	Ala	Ala	Lys	Glu	Gly	Gly	Val	Ile	His	Ser	Lys	Thr	Val
		435					440					445			
Thr	Leu	Ser	Asn	Leu	Lys	Ser	Thr	Phe	Thr	Phe	Ala	Asp	Asn	Thr	Val
		450				455					460				
Lys	Ala	Ile	Val	Glu	Ser	Thr	Pro	Glu	Ala	Pro	Glu	Glu	Ile	Pro	Pro
465					470					475					480
Val	Glu	Gly	Glu	Glu	Ser	Thr	Ala	Thr	Glu	Asn	Pro	Asn	Ser	Asn	Thr
			485					490						495	
Glu	Gly	Ser	Ser	Ala	Asn	Thr	Asn	Leu	Glu	Gly	Ser	Gln	Gly	Asp	Thr
			500					505					510		
Ala	Asp	Thr	Gly	Thr	Gly	Val	Val	Asn	Asn	Glu	Ser	Gln	Asp	Thr	Ser
		515					520					525			
Asp	Thr	Gly	Asn	Ala	Glu	Ser	Gly	Glu	Gln	Leu	Gln	Asp	Ser	Thr	Gln
		530				535					540				
Ser	Asn	Glu	Glu	Asn	Thr	Leu	Pro	Asn	Ser	Ser	Ile	Asp	Gln	Ser	Asn
545					550					555					560
Glu	Asn	Thr	Asp	Glu	Ser	Ser	Asp	Ser	His	Thr	Glu	Glu	Ile	Thr	Asp



565  
Glu Ser Val Ser Ser Ser Ser  
580

570

575

<210> 354  
<211> 39  
<212> DNA  
<213> Chlamydia trachomatis

<400> 354  
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39

<210> 355  
<211> 36  
<212> DNA  
<213> Chlamydia trachomatis

<400> 355  
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36

<210> 356  
<211> 2052  
<212> DNA  
<213> Chlamydia trachomatis

<400> 356  
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accgttcata tcgggcctac cgccttcctc ggcttgggtg ttgtcgacaa caacggcaac 180  
ggcgcacgag tccaacgcgt ggtcgggagc gctcggcgcg caagtctcgg catctccacc 240  
ggcgacgtga tcaccgcggt cgacggcgct ccgatcaact cggccaccgc gatggcggac 300  
gcgcttaacg ggcacatcc cggtgacgtc atctcgggtga cctggcaaac caagtccggc 360  
ggcagcgcta cagggaacgt gacattggcc gagggacccc cggccgaatt ctgcagatat 420  
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cacactgagg aaataactga cgagagtgtc tcatcgtcct ctaaaagtgg atcatctact 540  
cctcaagatg gaggagcagc ttcttcaggg gctccctcag gagatcaatc tatctctgca 600  
aacgcttggt tagctaaaag ctatgctgcg agtactgata gctccctgt atctaattct 660  
tcaggttcag acgttactgc atcttctgat aatccagact ctccctcatc tggagatagc 720  
gctggagact ctgaaggacc gactgagcca gaagctgggt ctacaacaga aactcctact 780  
ttaataggag gaggwgctat ctatggagaa actgttaaga ttgagaactt ctctggccaa 840  
ggaatatctt ctggaacaa agctatcgat aacaccacag aaggctcctc ttccaaatct 900  
aacgtcctcg gaggtgcggt ctatgctaaa acattgttta atctcgatag cgggagctct 960  
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tacgcacctg tcgtttccat taaagcctat actgcgacat ttaacccaaa cagatctcta 1380  
gaagaaggaa gcgcgattta ctttacaaaa gaagcatcta ttgagtcttt aggtctgttt 1440  
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acaacctcag gagatgtaac aaaatatggt gctgctatct ttggacaaat agcaagctca 1560  
aacggatctc agacggataa ccttcccctg aaactcattg cttcaggagg aaatatgtgt 1620  
ttccgaaaca atgaataccg tcctacttct tctgataccg gaacctctac tttctgtagt 1680  
attgcgggag atgttaaatt aacctgcaa gctgcaaaag ggaaaacgat cagtttcttt 1740  
gatgcaatcc ggacctctac taagaaaaca ggtacacagg caactgccta cgatactctc 1800  
gatattaata aatctgagga ttcagaaact gtaaaactct cgtttacagg aacgattctg 1860  
ttctcctctg aattacatga aaataaatcc tataattccac aaaacgtagt tctacacagt 1920  
ggatctcttg tattgaagcc aaataccgag cttcatgtca tttcttttga gcagaaagaa 1980  
ggctcttctc tcgttatgac acctggatct gttcttttga accagactgt tgctgatgga 2040  
gctttggtct aa 2052

&lt;210&gt; 357

&lt;211&gt; 683

&lt;212&gt; PRT

&lt;213&gt; Chlamydia trachomatis

&lt;400&gt; 357

Met	His	His	His	His	His	His	Thr	Ala	Ala	Ser	Asp	Asn	Phe	Gln	Leu
1				5					10					15	
Ser	Gln	Gly	Gly	Gln	Gly	Phe	Ala	Ile	Pro	Ile	Gly	Gln	Ala	Met	Ala
		20						25					30		
Ile	Ala	Gly	Gln	Ile	Lys	Leu	Pro	Thr	Val	His	Ile	Gly	Pro	Thr	Ala
		35					40					45			
Phe	Leu	Gly	Leu	Gly	Val	Val	Asp	Asn	Asn	Gly	Asn	Gly	Ala	Arg	Val
	50					55					60				
Gln	Arg	Val	Val	Gly	Ser	Ala	Pro	Ala	Ala	Ser	Leu	Gly	Ile	Ser	Thr
65					70					75					80
Gly	Asp	Val	Ile	Thr	Ala	Val	Asp	Gly	Ala	Pro	Ile	Asn	Ser	Ala	Thr
				85					90					95	
Ala	Met	Ala	Asp	Ala	Leu	Asn	Gly	His	His	Pro	Gly	Asp	Val	Ile	Ser
			100					105					110		
Val	Thr	Trp	Gln	Thr	Lys	Ser	Gly	Gly	Thr	Arg	Thr	Gly	Asn	Val	Thr
		115					120					125			
Leu	Ala	Glu	Gly	Pro	Pro	Ala	Glu	Phe	Cys	Arg	Tyr	Pro	Ser	His	Trp
	130					135					140				
Arg	Pro	Leu	Asp	Gln	Ser	Asn	Glu	Asn	Thr	Asp	Glu	Ser	Ser	Asp	Ser
145					150					155					160
His	Thr	Glu	Glu	Ile	Thr	Asp	Glu	Ser	Val	Ser	Ser	Ser	Ser	Lys	Ser
				165					170					175	
Gly	Ser	Ser	Thr	Pro	Gln	Asp	Gly	Gly	Ala	Ala	Ser	Ser	Gly	Ala	Pro
			180					185					190		
Ser	Gly	Asp	Gln	Ser	Ile	Ser	Ala	Asn	Ala	Cys	Leu	Ala	Lys	Ser	Tyr
		195					200					205			
Ala	Ala	Ser	Thr	Asp	Ser	Ser	Pro	Val	Ser	Asn	Ser	Ser	Gly	Ser	Asp
		210					215				220				
Val	Thr	Ala	Ser	Ser	Asp	Asn	Pro	Asp	Ser	Ser	Ser	Ser	Gly	Asp	Ser
225					230					235					240
Ala	Gly	Asp	Ser	Glu	Gly	Pro	Thr	Glu	Pro	Glu	Ala	Gly	Ser	Thr	Thr
				245						250				255	
Glu	Thr	Pro	Thr	Leu	Ile	Gly	Gly	Gly	Ala	Ile	Tyr	Gly	Glu	Thr	Val
			260					265					270		
Lys	Ile	Glu	Asn	Phe	Ser	Gly	Gln	Gly	Ile	Phe	Ser	Gly	Asn	Lys	Ala
		275					280					285			
Ile	Asp	Asn	Thr	Thr	Glu	Gly	Ser	Ser	Ser	Lys	Ser	Asn	Val	Leu	Gly
	290					295					300				
Gly	Ala	Val	Tyr	Ala	Lys	Thr	Leu	Phe	Asn	Leu	Asp	Ser	Gly	Ser	Ser
305					310					315					320
Arg	Arg	Thr	Val	Thr	Phe	Ser	Gly	Asn	Thr	Val	Ser	Ser	Gln	Ser	Thr
				325					330					335	
Thr	Gly	Gln	Val	Ala	Gly	Gly	Ala	Ile	Tyr	Ser	Pro	Thr	Val	Thr	Ile
			340					345					350		
Ala	Thr	Pro	Val	Val	Phe	Ser	Lys	Asn	Ser	Ala	Thr	Asn	Asn	Ala	Asn
		355					360					365			
Asn	Ala	Thr	Asp	Thr	Gln	Arg	Lys	Asp	Thr	Phe	Gly	Gly	Ala	Ile	Gly
		370				375					380				
Ala	Thr	Ser	Ala	Val	Ser	Leu	Ser	Gly	Gly	Ala	His	Phe	Leu	Glu	Asn
385					390					395					400
Val	Ala	Asp	Leu	Gly	Ser	Ala	Ile	Gly	Leu	Val	Pro	Asp	Thr	Gln	Asn
			405						410					415	
Thr	Glu	Thr	Val	Lys	Leu	Glu	Ser	Gly	Ser	Tyr	Tyr	Phe	Glu	Lys	Asn
			420					425					430		

Lys Ala Leu Lys Arg Ala Thr Ile Tyr Ala Pro Val Val Ser Ile Lys  
 435 440 445  
 Ala Tyr Thr Ala Thr Phe Asn Gln Asn Arg Ser Leu Glu Glu Gly Ser  
 450 455 460  
 Ala Ile Tyr Phe Thr Lys Glu Ala Ser Ile Glu Ser Leu Gly Ser Val  
 465 470 475 480  
 Leu Phe Thr Gly Asn Leu Val Thr Pro Thr Leu Ser Thr Thr Thr Glu  
 485 490 495  
 Gly Thr Pro Ala Thr Thr Ser Gly Asp Val Thr Lys Tyr Gly Ala Ala  
 500 505 510  
 Ile Phe Gly Gln Ile Ala Ser Ser Asn Gly Ser Gln Thr Asp Asn Leu  
 515 520 525  
 Pro Leu Lys Leu Ile Ala Ser Gly Gly Asn Ile Cys Phe Arg Asn Asn  
 530 535 540  
 Glu Tyr Arg Pro Thr Ser Ser Asp Thr Gly Thr Ser Thr Phe Cys Ser  
 545 550 555 560  
 Ile Ala Gly Asp Val Lys Leu Thr Met Gln Ala Ala Lys Gly Lys Thr  
 565 570 575  
 Ile Ser Phe Phe Asp Ala Ile Arg Thr Ser Thr Lys Lys Thr Gly Thr  
 580 585 590  
 Gln Ala Thr Ala Tyr Asp Thr Leu Asp Ile Asn Lys Ser Glu Asp Ser  
 595 600 605  
 Glu Thr Val Asn Ser Ala Phe Thr Gly Thr Ile Leu Phe Ser Ser Glu  
 610 615 620  
 Leu His Glu Asn Lys Ser Tyr Ile Pro Gln Asn Val Val Leu His Ser  
 625 630 635 640  
 Gly Ser Leu Val Leu Lys Pro Asn Thr Glu Leu His Val Ile Ser Phe  
 645 650 655  
 Glu Gln Lys Glu Gly Ser Ser Leu Val Met Thr Pro Gly Ser Val Leu  
 660 665 670  
 Ser Asn Gln Thr Val Ala Asp Gly Ala Leu Val  
 675 680

<210> 358  
 <211> 1248  
 <212> DNA  
 <213> Chlamydia

<400> 358  
 catatgcatc accatcacca tcaccctcca gaatcgggct taatcatagc cattcacgat 60  
 gatcctcgct ctctttctcc agaaaaagga gaaaatgctt tccatttttc tttgtccaag 120  
 gctttatttg ctactctctt cagagaagag ctctctggat taacccttgc tctgggtctcc 180  
 tctatcaag tttcggaaga cgggcggttt tatcgttttt gtattcgtaa agatgctaag 240  
 tggagtgcag gctctctttt acttgcagaa gatgtaatag ctgcttgga acacactaaa 300  
 caagctgggc gatattccct actttttgaa aagctatctt ttcgagcctc ttcttcttcg 360  
 gaaatcctta ttgaactcaa agaaccgag cctcaactat tggcgatatt agcctctccg 420  
 ttttttgcgt tgtatcgtec agaaaatcct tttctttctt ctggaccttt tatgccaaaa 480  
 acctatgtgc aagggaacac gctcgttcta caaaaaaacc cttattacta tgaccatgcg 540  
 catgtggaat tacattccat agactttcgc atcattccca acatttacac agctctacac 600  
 ctcttaagaa gaggtgacgt ggattgggtg gggcagcctt ggcaccaagg gattcctttt 660  
 gagcttcgga ctacctctgc tctctacacc cattaccctg tagatggcac attctggctt 720  
 attcttaatc ccaaagatcc tgtactttcc tctctatcta atcgtcagcg attgattgct 780  
 gccatccaaa aggaaaaact ggtgaagcaa gctttaggaa cacaatatcg agtagctgaa 840  
 agctctccat ctccagaggg aatcatagct catcaagaag cttctactcc ttttctggg 900  
 aaaattactt tgcataatcc caataatatt acgcgctgtc agcggttggc cgaggtattg 960  
 caagaacaat gccgagacgc aggtatccag ctgactcttg aaggactcga ataccatgta 1020  
 tttgttcaaa aacgagccac tcaagatttc tctgtctcca cagcaacttc tatagctttc 1080  
 catccccttg ctaaatctaa gttcgatcaa acggctctag acaatttcac ttgtctgccc 1140  
 ttgtaccaca tagaatatga ttatatatttg agcagaccgc tagatcaaat tgttcactat 1200  
 ccttcaggta gtgttgattt gacctatgca cactttcact aggaattc 1248

<210> 359  
 <211> 1311  
 <212> DNA  
 <213> Chlamydia

<400> 359  
 catatgcac accatcacca tcacatgtat gtctgctcta tcttttttag tattatcgcc 60  
 ttcctaacgg tcggatgctc cttttctcct ccagaatcgg gcttaatcat agccattcac 120  
 gatgatcctc gctctctttc tccagaaaaa ggagaaaatg ctttccattt ttctttgtcc 180  
 aaggctttat ttgctactct cttcagagaa gagctctctg gattaacccc tgctctgggc 240  
 tcctcctatc aagtttcgga agacggggcg ttttatcggt tttgtattcg taaagatgct 300  
 aagtggagtg acggctctct tttacttgca gaagatgtaa tagctgcttg ggaacacact 360  
 aaacaagctg ggcgatattc cctacttttt gaaaagctat cttttcgagc ctcttcttct 420  
 tcggaaatcc ttattgaact caaagaaccc gagcctcaac tattggcgat attagcctct 480  
 ccgttttttg ctgtgtatcg tccagaaaat ccttttcttt cttctggacc ttttatgcca 540  
 aaaacctatg tgcaagggca aacgctcgtt ctacaaaaaa acccttatta ctatgacat 600  
 gcgcattgtg aattacattc catagacttt cgcattcttc ccaacattta cacagctcta 660  
 cacctcttaa gaagaggtga cgtggattgg ttctggcagc cttggcacca agggattcct 720  
 tttgagcttc ggactacctc tgctctctac acccattacc ctgtagatgg cacattctgg 780  
 cttattctta atcccaaaga tcctgtactt tcctctctat ctaatcgtca gcgattgatt 840  
 gctgccatcc aaaaggaaaa actggtgaag caagcttttag gaacacaata tcgagtagct 900  
 gaaagctctc catctccaga gggaatcata gctcatcaag aagcttctac tccttttctc 960  
 gggaaaatta ctttgatata tcccaataat attacgcgct gtcagcgttt ggccgaggta 1020  
 ttgaagaac aatgccgaga cgcaggtatc cagctgactc ttgaaggact cgaataccat 1080  
 gtatttggtc aaaaacgagc cactcaagat ttctctgtct ccacagcaac ttctatagct 1140  
 ttccatcccc ttgctaaatc taagttcgat caaacggctc tagacaattt cacttgtctg 1200  
 cccttgtagc acatagaata tgattatatt ttgagcagac cgctagatca aattgttcac 1260  
 tatccttcag gtagtggtga tttgacctat gcacactttc actaggaatt c 1311

<210> 360  
 <211> 813  
 <212> DNA  
 <213> Chlamydia

<400> 360  
 atgcatcacc atcaccatca cggaaattct ggtttttatt tgtataacac tcaaaactgc 60  
 gtctttgctg ataatatcaa agttgggcaa atgacagagc cgctcaagga ccagcaata 120  
 atccttgga caacatcaac acctgtcgca gccaaaatga cagcttctga tggaaatct 180  
 ttaacagtct ccaataatcc atcaaccaat gcttctatta caattgggtt ggatgcgga 240  
 aaagcttacc agcttattct agaaaagtgg ggagatcaaa ttcttggtgg aattgctgat 300  
 actattggtg atagtacagt ccaagatatt tttagacaaa tcacaacaga cccttctcta 360  
 ggtttgttga aagcttttaa caactttcca atcactaata aaattcaatg caacgggtta 420  
 ttcactccca ggaacattga aactttatta ggaggaactg aaataggaaa attcacagtc 480  
 acacccaaaa gctctgggag catgttctta gtctcagcag atattattgc atcaagaatg 540  
 gaaggcggcg ttgttctagc tttggtacga gaagggtgatt ctaagcccta cgcgattagt 600  
 tatggatact catcaggcgt tcctaattta tgtagtctaa gaaccagaat tattaatata 660  
 ggattgactc cgacaacgta ttcattacgt gtaggcggtt tagaaagcgg tgtggtatgg 720  
 gttaatgccc tttctaattg caatgatatt tttaggaataa caaatacttc taatgtatct 780  
 tttttggagg taatacctca aacaaacgct taa 813

<210> 361  
 <211> 750  
 <212> DNA  
 <213> Chlamydia

<400> 361  
 atgcatcacc atcaccatca caaaataact ccgatcaaaa cacgtaaagt atttgcacat 60  
 gattcgcttc aagagatctt gcaagaggct ttgccgcctc tgcaagaacg gagtgtggta 120  
 gttgtctctt caaagattgt gagtttatgt gaaggcgtg tcgctgatgc aagaatgtgc 180  
 aaagcagagt tgataaaaaa agaagcggat gcttatttgt tttgtgagaa aagcgggata 240

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tatctaacga aaaaagaagg tatttttgatt ctttctgcag ggattgatga atcgaatacg 300
gaccagcctt ttgttttata tcctaaagat attttgggat cgtgtaatcg catcggagaa 360
tggttaagaa attatttttcg agtgaaagag ctaggcgtaa tcattacaga tagccatact 420
actccaatgc ggcgtggagt actgggtatc gggctgtggt ggtatggatt ttctccatta 480
cacaactata taggatcgct agattgtttc ggtcgtccct tacagatgac gcaaagtaat 540
ctttagatg ccttagcagt tgcggctggt gtttgtatgg gagaggggaa tgagcaaaca 600
ccgttagcgg tgatagagca ggcacctaata atggtctacc attcatatcc tacttctcga 660
gaagagtatt gttctttgcg catagatgaa acagaggact tatacggacc ttttttgcaa 720
gcggttacgt ggagtcaaga aaagaaatag 750

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&lt;210&gt; 362

&lt;211&gt; 412

&lt;212&gt; PRT

&lt;213&gt; Chlamydia

&lt;400&gt; 362

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Met His His His His His His Pro Pro Glu Ser Gly Leu Ile Ile Ala
      5      10      15
Ile His Asp Asp Pro Arg Ser Leu Ser Pro Glu Lys Gly Glu Asn Ala
      20      25      30
Phe His Phe Ser Leu Ser Lys Ala Leu Phe Ala Thr Leu Phe Arg Glu
      35      40      45
Glu Leu Ser Gly Leu Thr Pro Ala Leu Val Ser Ser Tyr Gln Val Ser
      50      55      60
Glu Asp Gly Arg Phe Tyr Arg Phe Cys Ile Arg Lys Asp Ala Lys Trp
      65      70      75      80
Ser Asp Gly Ser Leu Leu Ala Glu Asp Val Ile Ala Ala Trp Glu
      85      90      95
His Thr Lys Gln Ala Gly Arg Tyr Ser Leu Leu Phe Glu Lys Leu Ser
      100      105      110
Phe Arg Ala Ser Ser Ser Ser Glu Ile Leu Ile Glu Leu Lys Glu Pro
      115      120      125
Glu Pro Gln Leu Leu Ala Ile Leu Ala Ser Pro Phe Phe Ala Val Tyr
      130      135      140
Arg Pro Glu Asn Pro Phe Leu Ser Ser Gly Pro Phe Met Pro Lys Thr
      145      150      155      160
Tyr Val Gln Gly Gln Thr Leu Val Leu Gln Lys Asn Pro Tyr Tyr Tyr
      165      170      175
Asp His Ala His Val Glu Leu His Ser Ile Asp Phe Arg Ile Ile Pro
      180      185      190
Asn Ile Tyr Thr Ala Leu His Leu Leu Arg Arg Gly Asp Val Asp Trp
      195      200      205
Val Gly Gln Pro Trp His Gln Gly Ile Pro Phe Glu Leu Arg Thr Thr
      210      215      220
Ser Ala Leu Tyr Thr His Tyr Pro Val Asp Gly Thr Phe Trp Leu Ile
      225      230      235      240
Leu Asn Pro Lys Asp Pro Val Leu Ser Ser Leu Ser Asn Arg Gln Arg
      245      250      255
Leu Ile Ala Ala Ile Gln Lys Glu Lys Leu Val Lys Gln Ala Leu Gly
      260      265      270
Thr Gln Tyr Arg Val Ala Glu Ser Ser Pro Ser Pro Glu Gly Ile Ile
      275      280      285
Ala His Gln Glu Ala Ser Thr Pro Phe Pro Gly Lys Ile Thr Leu Ile
      290      295      300
Tyr Pro Asn Asn Ile Thr Arg Cys Gln Arg Leu Ala Glu Val Leu Gln
      305      310      315      320
Glu Gln Cys Arg Asp Ala Gly Ile Gln Leu Thr Leu Glu Gly Leu Glu
      325      330      335
Tyr His Val Phe Val Gln Lys Arg Ala Thr Gln Asp Phe Ser Val Ser
      340      345      350
Thr Ala Thr Ser Ile Ala Phe His Pro Leu Ala Lys Ser Lys Phe Asp

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          355          360          365
Gln Thr Ala Leu Asp Asn Phe Thr Cys Leu Pro Leu Tyr His Ile Glu
      370          375          380
Tyr Asp Tyr Ile Leu Ser Arg Pro Leu Asp Gln Ile Val His Tyr Pro
385          390          395          400
Ser Gly Ser Val Asp Leu Thr Tyr Ala His Phe His
          405          410

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<210> 363  
 <211> 433  
 <212> PRT  
 <213> Chlamydia

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<400> 363
Met His His His His His His Met Tyr Val Arg Ser Ile Phe Phe Ser
          5          10          15
Ile Ile Ala Phe Leu Thr Val Gly Cys Ser Phe Ser Pro Pro Glu Ser
          20          25          30
Gly Leu Ile Ile Ala Ile His Asp Asp Pro Arg Ser Leu Ser Pro Glu
          35          40          45
Lys Gly Glu Asn Ala Phe His Phe Ser Leu Ser Lys Ala Leu Phe Ala
          50          55          60
Thr Leu Phe Arg Glu Glu Leu Ser Gly Leu Thr Pro Ala Leu Val Ser
          65          70          75          80
Ser Tyr Gln Val Ser Glu Asp Gly Arg Phe Tyr Arg Phe Cys Ile Arg
          85          90          95
Lys Asp Ala Lys Trp Ser Asp Gly Ser Leu Leu Leu Ala Glu Asp Val
          100          105          110
Ile Ala Ala Trp Glu His Thr Lys Gln Ala Gly Arg Tyr Ser Leu Leu
          115          120          125
Phe Glu Lys Leu Ser Phe Arg Ala Ser Ser Ser Ser Glu Ile Leu Ile
          130          135          140
Glu Leu Lys Glu Pro Glu Pro Gln Leu Leu Ala Ile Leu Ala Ser Pro
145          150          155          160
Phe Phe Ala Val Tyr Arg Pro Glu Asn Pro Phe Leu Ser Ser Gly Pro
          165          170          175
Phe Met Pro Lys Thr Tyr Val Gln Gly Gln Thr Leu Val Leu Gln Lys
          180          185          190
Asn Pro Tyr Tyr Tyr Asp His Ala His Val Glu Leu His Ser Ile Asp
          195          200          205
Phe Arg Ile Ile Pro Asn Ile Tyr Thr Ala Leu His Leu Leu Arg Arg
          210          215          220
Gly Asp Val Asp Trp Val Gly Gln Pro Trp His Gln Gly Ile Pro Phe
225          230          235          240
Glu Leu Arg Thr Thr Ser Ala Leu Tyr Thr His Tyr Pro Val Asp Gly
          245          250          255
Thr Phe Trp Leu Ile Leu Asn Pro Lys Asp Pro Val Leu Ser Ser Leu
          260          265          270
Ser Asn Arg Gln Arg Leu Ile Ala Ala Ile Gln Lys Glu Lys Leu Val
          275          280          285
Lys Gln Ala Leu Gly Thr Gln Tyr Arg Val Ala Glu Ser Ser Pro Ser
          290          295          300
Pro Glu Gly Ile Ile Ala His Gln Glu Ala Ser Thr Pro Phe Pro Gly
305          310          315          320
Lys Ile Thr Leu Ile Tyr Pro Asn Asn Ile Thr Arg Cys Gln Arg Leu
          325          330          335
Ala Glu Val Leu Gln Glu Gln Cys Arg Asp Ala Gly Ile Gln Leu Thr
          340          345          350
Leu Glu Gly Leu Glu Tyr His Val Phe Val Gln Lys Arg Ala Thr Gln
          355          360          365

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Asp Phe Ser Val Ser Thr Ala Thr Ser Ile Ala Phe His Pro Leu Ala  
 370 375 380  
 Lys Ser Lys Phe Asp Gln Thr Ala Leu Asp Asn Phe Thr Cys Leu Pro  
 385 390 395 400  
 Leu Tyr His Ile Glu Tyr Asp Tyr Ile Leu Ser Arg Pro Leu Asp Gln  
 405 410 415  
 Ile Val His Tyr Pro Ser Gly Ser Val Asp Leu Thr Tyr Ala His Phe  
 420 425 430  
 His

<210> 364  
 <211> 264  
 <212> PRT  
 <213> Chlamydia

<400> 364  
 Met Gly Asn Ser Gly Phe Tyr Leu Tyr Asn Thr Gln Asn Cys Val Phe  
 5 10 15  
 Ala Asp Asn Ile Lys Val Gly Gln Met Thr Glu Pro Leu Lys Asp Gln  
 20 25 30  
 Gln Ile Ile Leu Gly Thr Thr Ser Thr Pro Val Ala Ala Lys Met Thr  
 35 40 45  
 Ala Ser Asp Gly Ile Ser Leu Thr Val Ser Asn Asn Pro Ser Thr Asn  
 50 55 60  
 Ala Ser Ile Thr Ile Gly Leu Asp Ala Glu Lys Ala Tyr Gln Leu Ile  
 65 70 75 80  
 Leu Glu Lys Leu Gly Asp Gln Ile Leu Gly Gly Ile Ala Asp Thr Ile  
 85 90 95  
 Val Asp Ser Thr Val Gln Asp Ile Leu Asp Lys Ile Thr Thr Asp Pro  
 100 105 110  
 Ser Leu Gly Leu Leu Lys Ala Phe Asn Asn Phe Pro Ile Thr Asn Lys  
 115 120 125  
 Ile Gln Cys Asn Gly Leu Phe Thr Pro Arg Asn Ile Glu Thr Leu Leu  
 130 135 140  
 Gly Gly Thr Glu Ile Gly Lys Phe Thr Val Thr Pro Lys Ser Ser Gly  
 145 150 155 160  
 Ser Met Phe Leu Val Ser Ala Asp Ile Ile Ala Ser Arg Met Glu Gly  
 165 170 175  
 Gly Val Val Leu Ala Leu Val Arg Glu Gly Asp Ser Lys Pro Tyr Ala  
 180 185 190  
 Ile Ser Tyr Gly Tyr Ser Ser Gly Val Pro Asn Leu Cys Ser Leu Arg  
 195 200 205  
 Thr Arg Ile Ile Asn Thr Gly Leu Thr Pro Thr Thr Tyr Ser Leu Arg  
 210 215 220  
 Val Gly Gly Leu Glu Ser Gly Val Val Trp Val Asn Ala Leu Ser Asn  
 225 230 235 240  
 Gly Asn Asp Ile Leu Gly Ile Thr Asn Thr Ser Asn Val Ser Phe Leu  
 245 250 255  
 Glu Val Ile Pro Gln Thr Asn Ala  
 260

<210> 365  
 <211> 249  
 <212> PRT  
 <213> Chlamydia

<400> 365  
 Met His His His His His His Lys Ile Thr Pro Ile Lys Thr Arg Lys  
 5 10 15

Val	Phe	Ala	His	Asp	Ser	Leu	Gln	Glu	Ile	Leu	Gln	Glu	Ala	Leu	Pro
			20					25					30		
Pro	Leu	Gln	Glu	Arg	Ser	Val	Val	Val	Val	Ser	Ser	Lys	Ile	Val	Ser
		35					40					45			
Leu	Cys	Glu	Gly	Ala	Val	Ala	Asp	Ala	Arg	Met	Cys	Lys	Ala	Glu	Leu
	50					55					60				
Ile	Lys	Lys	Glu	Ala	Asp	Ala	Tyr	Leu	Phe	Cys	Glu	Lys	Ser	Gly	Ile
	65				70					75					80
Tyr	Leu	Thr	Lys	Lys	Glu	Gly	Ile	Leu	Ile	Pro	Ser	Ala	Gly	Ile	Asp
				85					90					95	
Glu	Ser	Asn	Thr	Asp	Gln	Pro	Phe	Val	Leu	Tyr	Pro	Lys	Asp	Ile	Leu
			100					105					110		
Gly	Ser	Cys	Asn	Arg	Ile	Gly	Glu	Trp	Leu	Arg	Asn	Tyr	Phe	Arg	Val
		115					120					125			
Lys	Glu	Leu	Gly	Val	Ile	Ile	Thr	Asp	Ser	His	Thr	Thr	Pro	Met	Arg
	130					135						140			
Arg	Gly	Val	Leu	Gly	Ile	Gly	Leu	Cys	Trp	Tyr	Gly	Phe	Ser	Pro	Leu
	145				150					155					160
His	Asn	Tyr	Ile	Gly	Ser	Leu	Asp	Cys	Phe	Gly	Arg	Pro	Leu	Gln	Met
				165				170						175	
Thr	Gln	Ser	Asn	Leu	Val	Asp	Ala	Leu	Ala	Val	Ala	Ala	Val	Val	Cys
			180					185					190		
Met	Gly	Glu	Gly	Asn	Glu	Gln	Thr	Pro	Leu	Ala	Val	Ile	Glu	Gln	Ala
		195					200					205			
Pro	Asn	Met	Val	Tyr	His	Ser	Tyr	Pro	Thr	Ser	Arg	Glu	Glu	Tyr	Cys
	210				215						220				
Ser	Leu	Arg	Ile	Asp	Glu	Thr	Glu	Asp	Leu	Tyr	Gly	Pro	Phe	Leu	Gln
	225				230					235					240
Ala	Val	Thr	Trp	Ser	Gln	Glu	Lys	Lys							
				245											

&lt;210&gt; 366

&lt;211&gt; 2418

&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 366

atggacccaa	aagaaaaaaa	ttacgatgca	tccgctatta	ctgtttttaga	agggctacaa	60
gctgttcgtg	agcgccccgg	gatgtacatt	ggagatacgg	gaatcacggg	tcttcatcat	120
ctagtctatg	aggttgtaga	caacagcatt	gacgaagcca	tggcaggtta	ttgctctagg	180
attgatgttc	gcatttttaga	ggacgggggt	attgtcatcg	tagataatgg	ccgaggaatc	240
cctatagaag	ttcacgaaaag	agagtctgca	aaacaaggta	gagaggtctc	tgcttttagaa	300
gtggttttta	cagtccttca	tgctggagga	aaattcgata	aggatagcta	taaagtatcc	360
ggaggcttgc	acggagttgg	ggtttcttgc	gttaatgctc	tttcggagaa	attagttgcc	420
acggctctta	aagataagaa	gtgttatcaa	atggagttct	ctaggggaat	tcctgtaact	480
ccattgcagt	atgtaagtgt	tagtgatcgg	cagggaaacag	aaatcgtttt	ctaccctgat	540
cctaaaatat	tttcgacttg	tacttttgat	cgctctatct	taatgaaacg	cttgcgagag	600
cttgctttct	taaatcgtgg	gatcacaata	gtctttgaag	atgatcgaga	tgtagctttt	660
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&lt;210&gt; 367

&lt;211&gt; 888

&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 367

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&lt;210&gt; 368

&lt;211&gt; 237

&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 368

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tctgtagcaa gcaggaacaa tgtaagggtc agtttagaaa ttatggaaga aaagtag 237

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&lt;210&gt; 369

&lt;211&gt; 1437

&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 369

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&lt;210&gt; 370

&lt;211&gt; 774

&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 370

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&lt;210&gt; 371

&lt;211&gt; 576

&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 371

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 <213> Chlamydia pneumoniae

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<210> 373  
 <211> 369  
 <212> DNA  
 <213> Chlamydia pneumoniae

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&lt;210&gt; 375

&lt;211&gt; 5172

&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 375

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&lt;210&gt; 376

&lt;211&gt; 3759

&lt;212&gt; DNA

<213> *Chlamydia pneumoniae*

&lt;400&gt; 376

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&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 377

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&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 379

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gcgattggag	acatcactgg	aaagtggcta	cttgctcatg	tggcttcgca	ccaaggcgtt	960
attgccgcga	aaaatatttc	gggacatcac	gaagttatgg	attattctgc	cataccttct	1020
gtgatcttta	cccaccacga	aattgctatg	gtaggtctat	ctctacaaga	agcagaacaa	1080
caaaatcttc	ctgcaaagct	caccaaattt	cctttttaaag	cgattggaaa	agctgttgct	1140
ttgggagcat	ctgatgggtt	tgctgctatt	gtgagtcattg	aaattaccca	gcaaatactc	1200
ggagcttatg	tcataggacc	tcacgcctca	tcattaattg	gagagatgac	cttagcgatc	1260
cgcaatgagc	tgaccctacc	ttgcatatat	gaaaccgtgc	atgctcatcc	cacactctct	1320
gaagtttggg	ctgaaggtgc	tttacttgct	acaaatcacc	ccttacactt	ccctcctaag	1380
tcatga						1386

&lt;210&gt; 380

&lt;211&gt; 1635

&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 380

atggcagcga	aaaatattaa	atataatgaa	gaagccagaa	aaaaaataca	taaaggggta	60
aaaactcttg	cagaagcagt	aaaagttact	ctaggtccta	aaggacgtca	cgtagttata	120
gataagagct	ttggctctcc	ccaagtgact	aaagatgggt	ttactgtagc	taaagaaatc	180
gagctcgaag	acaaacatga	aaacatgggc	gctcagatgg	taaaagaagt	cgccagcaaa	240
actgctgaca	aagcaggcga	cggaactaca	acagcaactg	ttcttgacga	agcaatctat	300
agcgaaggtc	taagaaatgt	cactgccggt	gccaatccta	tggacctaaa	aagagggtatc	360
gacaaagccg	taaaagttgt	tgttgatgaa	ctcaaaaaaa	ttagtaaacc	tgtacaacat	420
cacaaagaaa	tcgctcaagt	agctactatc	tcagcaaata	atgattccga	aatcggaaat	480
cttattgcag	aagctatgga	aaaagttggg	aaaaacggat	ccattactgt	tgaagaagct	540
aaaggcttcg	aaactgttct	cgacgttgta	gaaggaatga	acttcaaccg	tggataacctc	600
tccagctact	tctccacaaa	tccagaaaact	caagaatgcg	ttttagaaga	cgctctgatt	660
ctaactctacg	ataaaaaaat	ctctggaatt	aaagacttcc	ttccagtttt	acaacaagta	720
gcagaatctg	gacgccctct	tttaatcatt	gcagaagaaa	ttgaaggaga	agcttttagca	780
actctagtag	tcaatagact	ccgtgcagga	ttcagagtct	gtgcagtga	agctcctggt	840
ttcgggtgaca	gaagaaaagc	tatgttagaa	gacatcgcta	tccttactgg	tggccaacta	900
gttagcgaag	aacttggcat	gaaactagag	aatacaactc	tagcaatgtt	aggaaaagct	960
aagaaagtta	tcgtaactaa	agaagatacc	acaatcgtcg	aaggcttagg	aaacaaacct	1020
gatatccaag	ctcgatgcga	caatattaaa	aaacaaatcg	aagatagcac	ttcagattac	1080
gacaaagaaa	aactccaaga	gcgtttagct	aaactctccg	gtgggtgtcg	cgtaatccgc	1140
gtaggagctg	ctaccgaaat	agagatgaaa	gagaaaaaag	acagagtaga	tgatgcacaa	1200
cacgcaacca	ttgcagctgt	cgaagaagga	atcctccctg	gtgggtggaac	tgccttagtt	1260
cgctgtatcc	ctacactaga	agctttcctt	cctatgctag	caaacgaaga	cgaagctatt	1320
ggtactcgta	ttattctaaa	agcattaaca	gctccattaa	agcaaattgc	aagtaacgca	1380
ggtaaagaag	gcgctatcat	ttgtcagcaa	gttctagcaa	gatctgcaaa	tgaaggctat	1440
gatgctttac	gtgacgctta	tacagatatg	attgacgcag	gaattttaga	tccaactaaa	1500
gtgactcgct	cagctctaga	aagcgcagct	tctatcgag	gattactcct	cacaacagaa	1560
gccttaatcg	ctgatatccc	agaagagaaa	tcttcttcag	ctccagcgat	gccaagcgca	1620
ggaatggact	actag					1635

&lt;210&gt; 381

&lt;211&gt; 1995

&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 381

atggaaaaag	tttcttctta	tccctcagtt	cctttacctc	ttggggcttc	taaaattttcc	60
ccaaaccgct	atcgatttgc	tttatatgct	tcacaagcta	ccgaagtcac	ccttgcttta	120

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acagacgaaa attcagaagt catagaagtc cctctttacc ccgatacaca ccgcacgggt 180
gcgattttggc atatatagagat cgagggtatt tctgatcaat cgtcttatgc atttcgtggt 240
catgggccta aaaagcatgg aatgcaatac tcttttaaag aatatcttgc agatccctat 300
gcgaagaata ttcatccccc acagagtttt gggtgcgaa agaaacaggg ggattatgca 360
ttttgttatt taaaggaaga accatttcct tgggatgggtg atcagcctct gcatttgccg 420
aaagaagaga tgatcatcta tgagatgcat gtacgttcct tcacgcaatc ttcttcatct 480
agggttcatg ctccgggaac ctctctagga atcattgaaa agatcgacca tctgcataag 540
ctgggaatca acgctgttga actcttacct atctttgagt tcgatgagac tgcgcatcct 600
tttagaaatt cgaaattccc ttatctgtgc aattattggg gttatgctcc cctaaatttc 660
ttttctcctt gccgacgtta tgcttatgcc tctgatcctt gcgctccaag tagagagttt 720
aaaacttttag taaagacctt gcatcaagaa ggtattgagg tcattcttga tgttgttttt 780
aatcatacgg gcttgcaagg gacgacctgc tctttgcctt ggatagacac tccgagctat 840
tatatttttag atgcacaagg tcactttaca aattattcag gctgtggaaa cacttcaat 900
acaaaccggc cccccacgac ccaatggatt ctgcacatct tacgttattg ggtagaagaa 960
atgcatgtcg atgggttccg atttgatctt gcttctgtct tttctcgtgg tccttcggga 1020
tctcccctac aattcgctcc tgttttagag gcgatttctt ttgatccttt acttgcgagc 1080
acaaagatta tagctgagcc ttgggatgct ggcggtttgt atcagggtggg ctatttcccc 1140
acactgtctc caagatggag tgaatggaac ggcccgatc gtgataacgt gaaagcattt 1200
cttaatgggg atcaaaatct cataggaacc tttgcttcta gaatttcagg atctcaagac 1260
atctatctc acgctcgcc tacaaattcg attaactatg tcagttgcc tgatggtttt 1320
acgttatgtg acactgtgac ttataaccac aaacataatg aggctaacgg agaggataat 1380
cgtgacggca cagatgcgaa ctacagctac aatttcggaa cggaaggga aacagaagac 1440
cctggcattc ttgaagttcg tgaaagacag ttacgaaatt ttttccttac tttgatggtc 1500
tcgcaaggca ttccgatgat tcaatcagga gatgagtatg cccataccgc ggaaggcaat 1560
aacaaccgtt gggctttgga ttccaatgct aattacttcc tttgggatca gcttaccgca 1620
aagcctacac tgatgcactt tctctgtgat ctcatcgct ttcgaaaaaa atataaaaca 1680
ctttttaate gaggctttct ttccaataag gaaatcagtt gggtagatgc tatgggaaat 1740
cccatgacat ggcgccctgg aaatttctta gcatttaaaa taaaatcgcc aaaagcgcat 1800
gtatatgttg cttttcacgt gggagctcaa gaccaacttg cgaccttacc taaagcctcc 1860
agcaactttc ttctttatca aatagttgcc gagagtcagc aagggtttgt ccctcaaaat 1920
gtagcaacgc cgacagtgtc gctacagccc cataccacgc taattgcgat cagccatgcy 1980
aaagaggtta cctga                                     1995

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&lt;210&gt; 382

&lt;211&gt; 987

&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 382

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atggcattca aagaggtcgt tcgtgttgct gtcacaggag gcaaagggca gattgcgtat 60
aattttttat ttgcattagc ccatggagat gtttttggag tggatcgtgg ttagatttta 120
cggatctatg atgtgccggg tacagagaga gctctctcag ggtgcgtat ggagctcgat 180
gacggtgcat atcctctttt acatcgtctg cgtgtgacga catcgttaaa cgacgctttt 240
gatgttatcg atgcggcggt tctgataggt gctgtgcctc gtggaccgg tatggagcga 300
ggagatcttt taaagcaaaa tggtcagatc ttttcgttac agggggccgc tttaaataca 360
gcagcaaaaa gagatgctaa gatttttgtt gtagggaacc ctgtcaatac gaattgctgg 420
attgctatga aacatgctcc cagattgcat cggaaaaatt tccatgcgat gttacgcttg 480
gatcagaatc gcatgcatag catgctcgct catcgtgctg aggttcctct agaggaggtc 540
tcccgtgttg tcatctgggg aaatcattct gcaaagcagg ttcttgactt cacacaagca 600
cgtatctcag ggaacccgc agccgaggtt atcggagatc gagattggtt ggaaaacatt 660
ttagtacact ccgtgcagaa tcgtggaagc gctgttaattg aagcaagagg gaaatcttcg 720
gcagcatccg catctcgagc acttgccgag gccgcgcgat ctattttttg tcctaaaagt 780
gacgagtggg tttcttctgg agtgtgttcg gatcataatc cttatgggtat tcctgaagac 840
ttgatttttg gttttccatg tcgtatgttg ccttctggag attatgaaat cattcctgga 900
ttgccttggg agccttttat cagaaataag attcaaattt ccctggatga aattgctcag 960
gaaaaagcta gcgtgtcttc gttataa                                     987

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&lt;210&gt; 383

&lt;211&gt; 654

&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 383

```

atgaaaagag tcattttataa aaccatattt tgcgggttaa ctttacttac aagtttgagt 60
agttgttccc tggatcctaa aggatataac ctatagacaa aaaactcgag ggacttaaat 120
caagagtctg ttatactgaa ggaaaaccgt gaaacacctt ctcttggtta gagactctct 180
cgtcgtttct gaagactctt cgctcgacgt gatcaaacct agaaggatac gctgcaagt 240
caagctaact ttaagaccta cgcagaaaag atttcagagc aggacgaaag agacctttct 300
ttcgttgtct cgtctgctgc agaaaagtct tcaatttcgt tagctttgtc tcagggtgaa 360
attaaggatg ctttgtagcg tatccgagaa gtccaccctc tagctttaat agaagctctt 420
gctgaaaacc ctgccttgat agaagggatg aaaaagatgc aaggccgtga ttggatttgg 480
aatcttttct taacacaatt aagtgaagta ttttctcaag ctgggtctca aggggttatc 540
tctgaagaag atatcgccgc atttgcctcc accttaggtt tggactccgg gaccgttgcg 600
tccattgtcc aaggggaaag gtggcccagc cttgtggata tagtgataac ttaa 654

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&lt;210&gt; 384

&lt;211&gt; 813

&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 384

```

atgatcataa taaaaaacia tgagctcatg ataagacgtt ttttcaaac gcttttccct 60
ccgggtcctc aatactcttt atgttatgct tcgatcctga tcgttttgag ttcccttggt 120
tgtgttctca ctttttggtg gttatttctc cctgaactgt ctttatctaa attcaatcct 180
tctcccatta ggaacctatt tttagtttcc tccactctat ccaaagtccc tcctactgcg 240
attgcagaac atttacgtct ttctgcggtat gcacctacat atctccatga attctctatt 300
aaagaagctg agtcgagctt gcatgctctt gggatttttt cctctttagt tatagaaaaa 360
tctcctgata ataaggcat tacaattttc tataccttac aaacacctat tgcttatggt 420
gggaaccgat ctaatacggt atgcaatctc gaggggagct gctttcttgg tcaaccgtac 480
ttccctctc tgaatctccc tcagattttt ttctctcaag aagatttaaa aatgcaaaaa 540
ctccctaaag aaaaaatgct ttttaccag attcttctta aggagcttgc tatggagtct 600
ccgaaaatca ttgattttatc tttatctgat gcataccctg gagaaattat agtgacgctc 660
tcttcaggca gtctgttaag acttccaatt aagaccttag atcgtgcctt agacctgtat 720
aagcacatga aaaaaagtcc tgtaatcgag agcgaaaaac aatatgtcta tgatttgcgt 780
tttccaaatt tcttattatt aaaagctcta tga 813

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&lt;210&gt; 385

&lt;211&gt; 1956

&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 385

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atgggttaac ctatttggtcc aggtcctata gacgaaacag aacgcacacc tcccgcagat 60
ctttctgctc aaggattgga ggcgagtgca gcaataaaga gtgcggaagc tcaaagaata 120
gcaggtgctg aagctaagcc taaagaatct aagaccgatt ctgtagagcg atggagcatc 180
ttgcgtttct cagtgaatgc tctcatgagt ctggcagata agctgggtat tgcttctagt 240
aacagctcgt cttctactag cagatctgca gacgtggact caacgacagc gaccgcacct 300
acgcctcctc caccacggtt tgatgattat aagactcaag cgcaaacagc ttacgatact 360
atctttacct caacatcact agctgacata caggctgctt tggtagacct ccaggatgct 420
gtcactaata taaaggatac agcggctact gatgaggaaa ccgcaatcgc tgcggagtgg 480
gaaactaaga atgccgatgc agttaaagtt ggcgcgcaaa ttacagaatt agcgaaatat 540
gcttcggata accaagcgat tcttgactct tttagttaa tgacttcctt cgacctctta 600
caggtgctc ttctccaatc ttagcaaac aataacaaag cagctgagct tcttaaagag 660
atgcaagata acccagtagt cccagggaaa acgcctgcaa ttgctcaatc tttagttgat 720
cagacagatg ctacagcgac acagatagag aaagatggaa atgcgattag ggatgcatat 780
tttgaggagc agaacgctag tggagctgta gaaaatgcta aatctaataa cagtataagc 840
aacatagatt cagctaaagc agcaatcgct actgctaaga cacaatagc tgaagctcag 900
aaaaagtctc ccgactctcc aattcttcaa gaagcggaa aaatggtaat acaggctgag 960
aaagatctta aaaaattcaa acctgcagat gttctgtagt ttccaaatcc aggaactaca 1020
gtttggaggct ccaagcaaca aggaagtagt attggtagta ttctgtttc catgctgta 1080
gatgatgctg aaaatgagac cgcttccatt ttgatgtctg ggtttcgtca gatgattcac 1140
atgttcaata cggaaaatcc tgattctcaa gctgcccaac aggagctcgc agcacaagct 1200

```

```

agagcagcga aagccgctgg agatgacagt gctgctgcag cgctggcaga tgctcagaaa 1260
gctttagaag cggctctagg taaagctggg caacaacagg gcataactcaa tgcttttagga 1320
cagatcgctt ctgctgctgt tgtgagcgca ggagttcctc ccgctgcagc aagttctata 1380
gggtcatctg taaaacagct ttacaagacc tcaaaatcta caggttctga ttataaaaca 1440
cagatatcag caggttatga tgcttacaaa tccatcaatg atgcctatgg tagggcacga 1500
aatgatgoga ctgctgatgt gataaacaat gtaagtaccc ccgctctcac acgatccgtt 1560
cctagagcac gaacagaagc tcgaggacca gaaaaaacag atcaagccct cgctaggggtg 1620
atctctggca atagcagaac tcttgagat gtctatagtc aagtttcggc actacaatct 1680
gtaatgcaga tcatccagtc gaatcctcaa gcgaataatg aggagatcag acaaaagctt 1740
acatcggcag tgacaaagcc tccacagttt ggctatcctt atgtgcaact ttctaatac 1800
tctacacaga agttcatagc taaattagaa agtttgtttg ctgaaggatc taggacagca 1860
gctgaaataa aagcactttc ctttgaaacg aactccttgt ttattcagca ggtgctggtc 1920
aatatcggtt ctctatatctc tggttatctc caataa 1956

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&lt;210&gt; 386

&lt;211&gt; 805

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 386

```

Met Asp Pro Lys Glu Lys Asn Tyr Asp Ala Ser Ala Ile Thr Val Leu
                    5                      10                      15

```

```

Glu Gly Leu Gln Ala Val Arg Glu Arg Pro Gly Met Tyr Ile Gly Asp
                    20                      25                      30

```

```

Thr Gly Ile Thr Gly Leu His His Leu Val Tyr Glu Val Val Asp Asn
                    35                      40                      45

```

```

Ser Ile Asp Glu Ala Met Ala Gly Tyr Cys Ser Arg Ile Asp Val Arg
                    50                      55                      60

```

```

Ile Leu Glu Asp Gly Gly Ile Val Ile Val Asp Asn Gly Arg Gly Ile
                    65                      70                      75                      80

```

```

Pro Ile Glu Val His Glu Arg Glu Ser Ala Lys Gln Gly Arg Glu Val
                    85                      90                      95

```

```

Ser Ala Leu Glu Val Val Leu Thr Val Leu His Ala Gly Gly Lys Phe
                    100                     105                     110

```

```

Asp Lys Asp Ser Tyr Lys Val Ser Gly Gly Leu His Gly Val Gly Val
                    115                     120                     125

```

```

Ser Cys Val Asn Ala Leu Ser Glu Lys Leu Val Ala Thr Val Phe Lys
                    130                     135                     140

```

```

Asp Lys Lys Cys Tyr Gln Met Glu Phe Ser Arg Gly Ile Pro Val Thr
                    145                     150                     155                     160

```

```

Pro Leu Gln Tyr Val Ser Val Ser Asp Arg Gln Gly Thr Glu Ile Val
                    165                     170                     175

```

```

Phe Tyr Pro Asp Pro Lys Ile Phe Ser Thr Cys Thr Phe Asp Arg Ser
                    180                     185                     190

```

```

Ile Leu Met Lys Arg Leu Arg Glu Leu Ala Phe Leu Asn Arg Gly Ile
                    195                     200                     205

```

```

Thr Ile Val Phe Glu Asp Asp Arg Asp Val Ser Phe Asp Lys Val Thr

```

210					215					220					
Phe 225	Phe	Tyr	Glu	Gly	Gly 230	Ile	Gln	Ser	Phe	Val 235	Ser	Tyr	Leu	Asn 240	Gln
Asn	Lys	Glu	Ser	Leu 245	Phe	Ser	Glu	Pro	Ile 250	Tyr	Ile	Cys	Gly	Thr 255	Arg
Val	Gly	Asp	Asp 260	Gly	Glu	Ile	Glu	Phe 265	Glu	Ala	Ala	Leu	Gln 270	Trp	Asn
Ser	Gly	Tyr 275	Ser	Glu	Leu	Val	Tyr 280	Ser	Tyr	Ala	Asn	Asn 285	Ile	Pro	Thr
Arg 290	Gln	Gly	Gly	Thr	His	Leu 295	Thr	Gly	Phe	Ser	Thr 300	Ala	Leu	Thr	Arg
Val 305	Ile	Asn	Thr	Tyr	Ile 310	Lys	Ala	His	Asn	Leu 315	Ala	Lys	Asn	Asn	Lys 320
Leu	Ala	Leu	Thr	Gly 325	Glu	Asp	Ile	Arg	Glu 330	Gly	Leu	Thr	Ala	Val 335	Ile
Ser	Val	Lys	Val 340	Pro	Asn	Pro	Gln	Phe 345	Glu	Gly	Gln	Thr	Lys 350	Gln	Lys
Leu	Gly 355	Asn	Ser	Asp	Val	Ser	Ser 360	Val	Ala	Gln	Gln 365	Val	Val	Gly	Glu
Ala 370	Leu	Thr	Ile	Phe	Phe	Glu 375	Glu	Asn	Pro	Gln	Ile 380	Ala	Arg	Met	Ile
Val 385	Asp	Lys	Val	Phe	Val 390	Ala	Ala	Gln	Ala	Arg 395	Glu	Ala	Ala	Lys	Lys 400
Ala	Arg	Glu	Leu	Thr 405	Leu	Arg	Lys	Ser	Ala 410	Leu	Asp	Ser	Ala	Arg 415	Leu
Pro	Gly	Lys	Leu 420	Ile	Asp	Cys	Leu	Glu 425	Lys	Asp	Pro	Glu	Lys 430	Cys	Glu
Met	Tyr	Ile 435	Val	Glu	Gly	Asp 440	Ser	Ala	Gly	Gly	Ser	Ala 445	Lys	Gln	Gly
Arg 450	Asp	Arg	Arg	Phe	Gln	Ala 455	Ile	Leu	Pro	Ile	Arg 460	Gly	Lys	Ile	Leu
Asn 465	Val	Glu	Lys	Ala	Arg 470	Leu	Gln	Lys	Ile	Phe 475	Gln	Asn	Gln	Glu	Ile 480
Gly	Thr	Ile	Ile	Ala 485	Ala	Leu	Gly	Cys	Gly 490	Ile	Gly	Ala	Asp	Asn 495	Phe
Asn	Leu	Ser	Lys 500	Leu	Arg	Tyr	Arg	Arg 505	Ile	Ile	Ile	Met	Thr 510	Asp	Ala
Asp	Val	Asp 515	Gly	Ser	His	Ile	Arg 520	Thr	Leu	Leu	Leu	Thr 525	Phe	Phe	Tyr
Arg 530	His	Met	Thr	Ala	Leu	Ile 535	Glu	Asn	Glu	Cys	Val 540	Tyr	Ile	Ala	Gln

Pro Pro Leu Tyr Lys Val Ser Lys Lys Lys Asp Phe Arg Tyr Ile Leu  
 545 550 555 560  
 Ser Glu Lys Glu Met Asp Ser Tyr Leu Leu Met Leu Gly Thr Asn Glu  
 565 570 575  
 Ser Ser Ile Leu Phe Lys Ser Thr Glu Arg Glu Leu Arg Gly Glu Ala  
 580 585 590  
 Leu Glu Ser Phe Ile Asn Val Ile Leu Asp Val Glu Ser Phe Ile Asn  
 595 600 605  
 Thr Leu Glu Lys Lys Ala Ile Pro Phe Ser Glu Phe Leu Glu Met Tyr  
 610 615 620  
 Lys Glu Gly Ile Gly Tyr Pro Leu Tyr Tyr Leu Ala Pro Ala Thr Gly  
 625 630 635 640  
 Met Gln Gly Gly Arg Tyr Leu Tyr Ser Asp Glu Glu Lys Glu Glu Ala  
 645 650 655  
 Leu Ala Gln Glu Glu Thr His Lys Phe Lys Ile Ile Glu Leu Tyr Lys  
 660 665 670  
 Val Ala Val Phe Val Asp Ile Gln Asn Gln Leu Lys Glu Tyr Gly Leu  
 675 680 685  
 Asp Ile Ser Ser Tyr Leu Ile Pro Gln Lys Asn Glu Ile Val Ile Gly  
 690 695 700  
 Asn Glu Asp Ser Pro Ser Cys Asn Tyr Ser Cys Tyr Thr Leu Glu Glu  
 705 710 715 720  
 Val Ile Asn Tyr Leu Lys Asn Leu Gly Arg Lys Gly Ile Glu Ile Gln  
 725 730 735  
 Arg Tyr Lys Gly Leu Gly Glu Met Asn Ala Asp Gln Leu Trp Asp Thr  
 740 745 750  
 Thr Met Asn Pro Glu Gln Arg Thr Leu Ile His Val Ser Leu Lys Asp  
 755 760 765  
 Ala Val Glu Ala Asp His Ile Phe Thr Met Leu Met Gly Glu Glu Val  
 770 775 780  
 Pro Pro Arg Arg Glu Phe Ile Glu Ser His Ala Leu Ser Ile Arg Ile  
 785 790 795 800  
 Asn Asn Leu Asp Ile  
 805

&lt;210&gt; 387

&lt;211&gt; 295

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 387

Met Glu Lys Leu Leu Val Thr Asp Ile Asp Gly Thr Ile Thr His Gln  
 5 10 15

Ser His His Leu Asp Lys Lys Val Tyr Glu Arg Leu Tyr Ala Leu His  
                     20                    25                    30  
 Gln Ala Gly Trp Lys Leu Phe Phe Leu Thr Gly Arg Tyr Tyr Lys Tyr  
                     35                    40                    45  
 Ala Ala Arg Leu Phe Ser Asp Phe Asp Ala Pro Tyr Leu Leu Gly Cys  
                     50                    55                    60  
 Gln Asn Gly Ala Ser Val Trp Ser Ser Thr Ser Ser Asn Leu Leu Tyr  
                     65                    70                    75                    80  
 Ser Lys Ser Leu Pro Ser Asp Leu Leu Cys Ile Leu Gln Asp Cys Met  
                     85                    90                    95  
 Glu Gly Ala Thr Ala Leu Phe Ser Val Glu Ser Gly Ala Pro Tyr Gly  
                     100                    105                    110  
 Asp His Tyr Tyr Arg Phe Ser Pro Thr Pro Ile Ala Gln Asp Leu His  
                     115                    120                    125  
 Glu Tyr Val Asp Pro Arg Tyr Phe Pro Asn Ala Lys Glu Arg Glu Ile  
                     130                    135                    140  
 Leu Phe Glu Thr Arg Ser Leu Lys Asp Asp Tyr Ala Phe Pro Ser Phe  
                     145                    150                    155                    160  
 Ala Ala Ala Lys Val Phe Gly Leu Arg Asp Glu Val Ile Arg Ile Gln  
                     165                    170                    175  
 Lys Glu Leu Glu Arg Gln Glu Ala Leu Thr Ser Val Ala Thr Met Thr  
                     180                    185                    190  
 Leu Met Arg Trp Pro Phe Asp Phe Arg Tyr Ala Ile Leu Phe Leu Thr  
                     195                    200                    205  
 Asp Lys Ser Val Ser Lys Gly Lys Ala Leu Asp Arg Val Val Asn Ile  
                     210                    215                    220  
 Leu Tyr Asp Gly Lys Lys Pro Phe Val Met Ala Ser Gly Asp Asp Ala  
                     225                    230                    235                    240  
 Asn Asp Leu Asp Leu Ile Glu Arg Gly Asp Phe Lys Ile Val Met Ser  
                     245                    250                    255  
 Ser Ala Pro Glu Glu Met His Val His Ala Asp Phe Leu Ala Pro Pro  
                     260                    265                    270  
 Ala Asp Lys Asn Gly Ile Leu Ser Ala Trp Glu Ala Gly Val Arg Tyr  
                     275                    280                    285  
 Tyr Asp Asp Leu Met Ser Leu  
                     290                    295

&lt;210&gt; 388

&lt;211&gt; 78

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 388

Met Lys Glu Phe Leu Ala Tyr Ile Ile Lys Asn Leu Val Asp Arg Pro  
                                   5                                  10                                  15

Glu Glu Val Arg Ile Lys Glu Val Gln Gly Thr His Thr Ile Ile Tyr  
                                   20                                  25                                  30

Glu Leu Ser Val Ala Lys Pro Asp Ile Gly Lys Ile Ile Gly Lys Glu  
                                   35                                  40                                  45

Gly Arg Thr Ile Lys Ala Ile Arg Thr Leu Leu Val Ser Val Ala Ser  
                                   50                                  55                                  60

Arg Asn Asn Val Arg Val Ser Leu Glu Ile Met Glu Glu Lys  
                                   65                                  70                                  75

&lt;210&gt; 389

&lt;211&gt; 478

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 389

Met Arg Asp Val Ser Glu Leu Phe Arg Thr His Phe Met His Tyr Ala  
                                   5                                  10                                  15

Ser Tyr Val Ile Leu Glu Arg Ala Ile Pro His Ile Leu Asp Gly Leu  
                                   20                                  25                                  30

Lys Pro Val Gln Arg Arg Leu Leu Trp Thr Leu Phe Leu Met Asp Asp  
                                   35                                  40                                  45

Gly Lys Met His Lys Val Ala Asn Ile Ala Gly Arg Thr Met Ala Leu  
                                   50                                  55                                  60

His Pro His Gly Asp Ala Pro Ile Val Glu Ala Leu Val Val Leu Ala  
                                   65                                  70                                  75                                  80

Asn Lys Gly Tyr Leu Ile Asp Thr Gln Gly Asn Phe Gly Asn Pro Leu  
                                   85                                  90                                  95

Thr Gly Asp Pro His Ala Ala Ala Arg Tyr Ile Glu Ala Arg Leu Ser  
                                   100                                  105                                  110

Pro Leu Ala Arg Glu Thr Leu Phe Asn Thr Asp Leu Ile Ala Phe His  
                                   115                                  120                                  125

Asp Ser Tyr Asp Gly Arg Glu Lys Glu Pro Asp Ile Leu Pro Ala Lys  
                                   130                                  135                                  140

Leu Pro Val Leu Leu Leu His Gly Val Asp Gly Ile Ala Val Gly Met  
                                   145                                  150                                  155                                  160

Thr Thr Lys Ile Phe Pro His Asn Phe Ala Glu Leu Leu Lys Ala Gln  
                                   165                                  170                                  175

Ile Ala Ile Leu Asn Asp Lys Lys Phe Thr Val Phe Pro Asp Phe Pro  
                                   180                                  185                                  190

Ser Gly Gly Leu Met Asp Pro Ser Glu Tyr Gln Asp Gly Leu Gly Ser  
                                   195                                  200                                  205



Ile Thr Leu Arg Ala Ser Ile Asp Ile Ile Asn Asp Lys Thr Leu Val  
 210 215 220  
 Val Lys Gln Ile Cys Pro Gln Ser Thr Thr Glu Thr Leu Ile Arg Ser  
 225 230 235 240  
 Ile Glu Asn Ala Ala Lys Arg Gly Thr Ile Lys Ile Asp Thr Ile Gln  
 245 250 255  
 Asp Phe Ser Thr Asp Val Pro His Ile Glu Ile Lys Leu Pro Lys Gly  
 260 265 270  
 Ser Arg Ala Lys Glu Met Leu Pro Leu Leu Phe Glu His Thr Glu Cys  
 275 280 285  
 Gln Val Ile Leu Tyr Ser Lys Pro Thr Val Ile Tyr Glu Asn Lys Pro  
 290 295 300  
 Val Glu Cys Ser Ile Ser Glu Ile Leu Lys Leu His Thr Thr Ala Leu  
 305 310 315 320  
 Gln Gly Tyr Leu Glu Lys Glu Leu Leu Leu Leu Gln Glu Gln Leu Thr  
 325 330 335  
 Leu Asp His Tyr His Lys Thr Leu Glu Tyr Ile Phe Ile Lys His Lys  
 340 345 350  
 Leu Tyr Asp Ser Val Arg Glu Val Leu Ala Ile Asn Lys Lys Ile Ser  
 355 360 365  
 Ala Asp Asp Leu His Gln Ala Val Leu His Ala Leu Glu Pro Trp Leu  
 370 375 380  
 His Glu Leu Ala Thr Pro Val Thr Lys Gln Asp Thr Ser Gln Leu Ala  
 385 390 395 400  
 Ser Leu Thr Ile Lys Lys Ile Leu Cys Phe Asn Glu Glu Ala Cys Thr  
 405 410 415  
 Lys Glu Leu Leu Ala Ile Glu Lys Lys Gln Ala Ala Ile Gln Lys Asp  
 420 425 430  
 Leu Gly Arg Ile Lys Glu Val Thr Val Lys Tyr Leu Lys Gly Leu Leu  
 435 440 445  
 Glu Arg His Gly His Leu Gly Glu Arg Lys Thr Gln Ile Thr Asn Phe  
 450 455 460  
 Lys Thr Ala Lys Thr Ser Ile Leu Lys Gln Gln Thr Leu Ile  
 465 470 475

&lt;210&gt; 390

&lt;211&gt; 257

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 390

Met Ala Phe Tyr Ser Pro Ser Thr Ile Ser Lys Tyr Phe Ile Tyr Ser  
 5 10 15

Gly	Ala	Gly	Asn 20	Arg	Phe	Leu	Leu	Gly 25	Glu	Thr	Leu	Pro	Glu 30	Val	Glu
Asp	Val	Arg 35	Phe	Leu	Cys	Gln	Glu 40	Thr	Arg	Val	Asp	Gly 45	Phe	Leu	Tyr
Leu	Lys 50	Pro	Ser	Ser	Cys	Ala 55	Asp	Ala	Gln	Leu	Ile 60	Ile	Phe	Asn	Ser
Asp 65	Gly	Ser	Arg	Pro	Thr 70	Met	Cys	Gly	Asn	Gly 75	Leu	Arg	Cys	Ala	Ile 80
Ala	His	Leu	Ala	Ser 85	Gln	Lys	Gly	Lys	Ser 90	Asp	Ile	Ser	Val	Ser 95	Thr
Asp	Ser	Gly	Leu 100	Tyr	Ser	Gly	Tyr	Phe 105	Tyr	Ser	Trp	Asp	Arg 110	Val	Leu
Val	Asp	Met 115	Thr	Leu	Ala	Asp	Trp 120	Arg	Ala	Ser	Val	His 125	Arg	Leu	Glu
Ser	Arg 130	Pro	Asp	Pro	Leu	Pro 135	Lys	Glu	Val	Val	Cys 140	Ile	His	Thr	Gly
Val 145	Pro	His	Ala	Val	Val 150	Ile	Leu	Pro	Glu	Ile 155	Ser	Thr	Leu	Asp	Leu 160
Ser	Ile	Leu	Gly	Pro 165	Phe	Leu	Arg	Tyr	His 170	Gln	Thr	Phe	Ser	Pro 175	Asp
Gly	Val	Asn 180	Val	Asn	Phe	Val	Gln 185	Ile	Leu	Gly	His	Cys	Gln 190	Leu	Arg
Val	Arg	Thr 195	Tyr	Glu	Arg	Gly	Val 200	Glu	Gly	Glu	Thr	Ala 205	Ala	Cys	Gly
Thr	Gly 210	Ala	Leu	Ala	Ser	Ala 215	Leu	Val	Val	Ser	Asn 220	Ser	Tyr	Gly	Trp
Lys 225	Glu	Ser	Ile	Gln	Ile 230	His	Thr	Trp	Gly	Gly 235	Glu	Leu	Met	Thr	Val 240
Ser	Gln	Asn	Arg	Gly 245	Arg	Val	Tyr	Leu	Gln 250	Gly	Ser	Val	Thr	Arg 255	Asp

Ser Ala Ser Asp Ala Ile Lys Lys Leu Trp Tyr Leu Glu Leu Lys Asp  
                   35                                  40                                  45  
 Pro Gly Lys Pro Ile Val Phe Val Ile Asn Ser Pro Gly Gly Ser Val  
                   50                                  55                                  60  
 Asp Ala Gly Phe Ala Val Trp Asp Gln Ile Lys Met Leu Thr Ser Pro  
                   65                                  70                                  75                                  80  
 Val Thr Thr Val Val Thr Gly Leu Ala Ala Ser Met Gly Ser Val Leu  
                                   85                                  90                                  95  
 Ser Leu Cys Ala Ala Pro Gly Arg Arg Phe Ala Thr Pro His Ser Arg  
                                   100                                  105                                  110  
 Ile Met Ile His Gln Pro Ser Ile Gly Gly Pro Ile Thr Gly Gln Ala  
                   115                                  120                                  125  
 Thr Asp Leu Asp Ile His Ala Arg Glu Ile Leu Lys Thr Lys Ala Arg  
                   130                                  135                                  140  
 Ile Ile Asp Val Tyr Val Glu Ala Thr Asn Gln Pro Arg Asp Ile Ile  
                   145                                  150                                  155                                  160  
 Glu Lys Ala Ile Asp Arg Asp Met Trp Met Thr Ala Asn Glu Ala Lys  
                                   165                                  170                                  175  
 Asp Phe Gly Leu Leu Asp Gly Ile Leu Phe Ser Phe Asn Asp Leu  
                   180                                  185                                  190

&lt;210&gt; 392

&lt;211&gt; 232

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 392

Met Thr Lys His Gly Lys Arg Ile Arg Gly Ile Leu Lys Asn Tyr Asp  
                                   5                                  10                                  15  
 Phe Ser Lys Ser Tyr Ser Leu Arg Glu Ala Ile Asp Ile Leu Lys Gln  
                   20                                  25                                  30  
 Cys Pro Pro Val Arg Phe Asp Gln Thr Val Asp Val Ser Ile Lys Leu  
                   35                                  40                                  45  
 Gly Ile Asp Pro Lys Lys Ser Asp Gln Gln Ile Arg Gly Ala Val Phe  
                   50                                  55                                  60  
 Leu Pro Asn Gly Thr Gly Lys Thr Leu Arg Ile Leu Val Phe Ala Ser  
                   65                                  70                                  75                                  80  
 Gly Asn Lys Val Lys Glu Ala Val Glu Ala Gly Ala Asp Phe Met Gly  
                                   85                                  90                                  95  
 Ser Asp Asp Leu Val Glu Lys Ile Lys Ser Gly Trp Leu Glu Phe Asp  
                   100                                  105                                  110  
 Val Ala Val Ala Thr Pro Asp Met Met Arg Glu Val Gly Lys Leu Gly  
                   115                                  120                                  125

Lys Val Leu Gly Pro Arg Asn Leu Met Pro Thr Pro Lys Thr Gly Thr  
 130 135 140  
 Val Thr Thr Asp Val Ala Lys Ala Ile Ser Glu Leu Arg Lys Gly Lys  
 145 150 155 160  
 Ile Glu Phe Lys Ala Asp Arg Ala Gly Val Cys Asn Val Gly Val Gly  
 165 170 175  
 Lys Leu Ser Phe Glu Ser Ser Gln Ile Lys Glu Asn Ile Glu Ala Leu  
 180 185 190  
 Ser Ser Ala Leu Ile Lys Ala Lys Pro Pro Ala Ala Lys Gly Gln Tyr  
 195 200 205  
 Leu Val Ser Phe Thr Ile Ser Ser Thr Met Gly Pro Gly Ile Ser Ile  
 210 215 220  
 Asp Thr Arg Glu Leu Met Ala Ser  
 225 230

<210> 393  
 <211> 122  
 <212> PRT  
 <213> Chlamydia pneumoniae

<400> 393  
 Met Pro Arg Ile Ile Gly Ile Asp Ile Pro Ala Lys Lys Lys Leu Lys  
 5 10 15  
 Ile Ser Leu Thr Tyr Ile Tyr Gly Ile Gly Ser Ala Arg Ser Asp Glu  
 20 25 30  
 Ile Ile Lys Lys Leu Lys Leu Asp Pro Glu Ala Arg Ala Ser Glu Leu  
 35 40 45  
 Thr Glu Glu Glu Val Gly Arg Leu Asn Ser Leu Leu Gln Ser Glu Tyr  
 50 55 60  
 Thr Val Glu Gly Asp Leu Arg Arg Arg Val Gln Ser Asp Ile Lys Arg  
 65 70 75 80  
 Leu Ile Ala Ile His Ser Tyr Arg Gly Gln Arg His Arg Leu Ser Leu  
 85 90 95  
 Pro Val Arg Gly Gln Arg Thr Lys Thr Asn Ser Arg Thr Arg Lys Gly  
 100 105 110  
 Lys Arg Lys Thr Val Ala Gly Lys Lys Lys  
 115 120

<210> 394  
 <211> 1723  
 <212> PRT  
 <213> Chlamydia pneumoniae

<400> 394  
 Met Lys Trp Leu Pro Ala Thr Ala Val Phe Ala Ala Val Leu Pro Ala

					5						10						15
Leu	Thr	Ala	Phe	Gly	Asp	Pro	Ala	Ser	Val	Glu	Ile	Ser	Thr	Ser	His		
			20					25					30				
Thr	Gly	Ser	Gly	Asp	Pro	Thr	Ser	Asp	Ala	Ala	Leu	Thr	Gly	Phe	Thr		
		35					40					45					
Gln	Ser	Ser	Thr	Glu	Thr	Asp	Gly	Thr	Thr	Tyr	Thr	Ile	Val	Gly	Asp		
	50					55					60						
Ile	Thr	Phe	Ser	Thr	Phe	Thr	Asn	Ile	Pro	Val	Pro	Val	Val	Thr	Pro		
65					70					75					80		
Asp	Ala	Asn	Asp	Ser	Ser	Ser	Asn	Ser	Ser	Lys	Gly	Gly	Ser	Ser	Ser		
				85				90						95			
Ser	Gly	Ala	Thr	Ser	Leu	Ile	Arg	Ser	Ser	Asn	Leu	His	Ser	Asp	Phe		
			100					105					110				
Asp	Phe	Thr	Lys	Asp	Ser	Val	Leu	Asp	Leu	Tyr	His	Leu	Phe	Phe	Pro		
		115					120					125					
Ser	Ala	Ser	Asn	Thr	Leu	Asn	Pro	Ala	Leu	Leu	Ser	Ser	Ser	Ser	Ser		
	130					135					140						
Gly	Gly	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Gly	Ser	Ala	Ser		
145					150					155					160		
Ala	Val	Val	Ala	Ala	Asp	Pro	Lys	Gly	Gly	Ala	Ala	Phe	Tyr	Ser	Asn		
				165					170					175			
Glu	Ala	Asn	Gly	Thr	Leu	Thr	Phe	Thr	Thr	Asp	Ser	Gly	Asn	Pro	Gly		
		180						185					190				
Ser	Leu	Thr	Leu	Gln	Asn	Leu	Lys	Met	Thr	Gly	Asp	Gly	Ala	Ala	Ile		
	195						200					205					
Tyr	Ser	Lys	Gly	Pro	Leu	Val	Phe	Thr	Gly	Leu	Lys	Asn	Leu	Thr	Phe		
	210					215					220						
Thr	Gly	Asn	Glu	Ser	Gln	Lys	Ser	Gly	Gly	Ala	Ala	Tyr	Thr	Glu	Gly		
225					230					235					240		
Ala	Leu	Thr	Thr	Gln	Ala	Ile	Val	Glu	Ala	Val	Thr	Phe	Thr	Gly	Asn		
				245					250					255			
Thr	Ser	Ala	Gly	Gln	Gly	Gly	Ala	Ile	Tyr	Val	Lys	Glu	Ala	Thr	Leu		
			260					265					270				
Phe	Asn	Ala	Leu	Asp	Ser	Leu	Lys	Phe	Glu	Lys	Asn	Thr	Ser	Gly	Gln		
		275					280					285					
Ala	Gly	Gly	Gly	Ile	Tyr	Thr	Glu	Ser	Thr	Leu	Thr	Ile	Ser	Asn	Ile		
	290					295					300						
Thr	Lys	Ser	Ile	Glu	Phe	Ile	Ser	Asn	Lys	Ala	Ser	Val	Pro	Ala	Pro		
305					310					315					320		
Ala	Pro	Glu	Pro	Thr	Ser	Pro	Ala	Pro	Ser	Ser	Leu	Ile	Asn	Ser	Thr		
				325					330					335			

Thr Ile Asp Thr Ser Thr Leu Gln Thr Arg Ala Ala Ser Ala Thr Pro  
 340 345 350  
 Ala Val Ala Pro Val Ala Ala Val Thr Pro Thr Pro Ile Ser Thr Gln  
 355 360 365  
 Glu Thr Ala Gly Asn Gly Gly Ala Ile Tyr Ala Lys Gln Gly Ile Ser  
 370 375 380  
 Ile Ser Thr Phe Lys Asp Leu Thr Phe Lys Ser Asn Ser Ala Ser Val  
 385 390 395 400  
 Asp Ala Thr Leu Thr Val Asp Ser Ser Thr Ile Gly Glu Ser Gly Gly  
 405 410 415  
 Ala Ile Phe Ala Ala Asp Ser Ile Gln Ile Gln Gln Cys Thr Gly Thr  
 420 425 430  
 Thr Leu Phe Ser Gly Asn Thr Ala Asn Lys Ser Gly Gly Gly Ile Tyr  
 435 440 445  
 Ala Val Gly Gln Val Thr Leu Glu Asp Ile Ala Asn Leu Lys Met Thr  
 450 455 460  
 Asn Asn Thr Cys Lys Gly Glu Gly Gly Ala Ile Tyr Thr Lys Lys Ala  
 465 470 475 480  
 Leu Thr Ile Asn Asn Gly Ala Ile Leu Thr Thr Phe Ser Gly Asn Thr  
 485 490 495  
 Ser Thr Asp Asn Gly Gly Ala Ile Phe Ala Val Gly Gly Ile Thr Leu  
 500 505 510  
 Ser Asp Leu Val Glu Val Arg Phe Ser Lys Asn Lys Thr Gly Asn Tyr  
 515 520 525  
 Ser Ala Pro Ile Thr Lys Ala Ala Ser Asn Thr Ala Pro Val Val Ser  
 530 535 540  
 Ser Ser Thr Thr Ala Ala Ser Pro Ala Val Pro Ala Ala Ala Ala Ala  
 545 550 555 560  
 Pro Val Thr Asn Ala Ala Lys Gly Gly Ala Leu Tyr Ser Thr Glu Gly  
 565 570 575  
 Leu Thr Val Ser Gly Ile Thr Ser Ile Leu Ser Phe Glu Asn Asn Glu  
 580 585 590  
 Cys Gln Asn Gln Gly Gly Gly Ala Tyr Val Thr Lys Thr Phe Gln Cys  
 595 600 605  
 Ser Asp Ser His Arg Leu Gln Phe Thr Ser Asn Lys Ala Ala Asp Glu  
 610 615 620  
 Gly Gly Gly Leu Tyr Cys Gly Asp Asp Val Thr Leu Thr Asn Leu Thr  
 625 630 635 640  
 Gly Lys Thr Leu Phe Gln Glu Asn Ser Ser Glu Lys His Gly Gly Gly  
 645 650 655

Leu Ser Leu Ala Ser Gly Lys Ser Leu Thr Met Thr Ser Leu Glu Ser  
 660 665 670  
 Phe Cys Leu Asn Ala Asn Thr Ala Lys Glu Asn Gly Gly Gly Ala Asn  
 675 680 685  
 Val Pro Glu Asn Ile Val Leu Thr Phe Thr Tyr Thr Pro Thr Pro Asn  
 690 695 700  
 Glu Pro Ala Pro Val Gln Gln Pro Val Tyr Gly Glu Ala Leu Val Thr  
 705 710 715 720  
 Gly Asn Thr Ala Thr Lys Ser Gly Gly Gly Ile Tyr Thr Lys Asn Ala  
 725 730 735  
 Ala Phe Ser Asn Leu Ser Ser Val Thr Phe Asp Gln Asn Thr Ser Ser  
 740 745 750  
 Glu Asn Gly Gly Ala Leu Leu Thr Gln Lys Ala Ala Asp Lys Thr Asp  
 755 760 765  
 Cys Ser Phe Thr Tyr Ile Thr Asn Val Asn Ile Thr Asn Asn Thr Ala  
 770 775 780  
 Thr Gly Asn Gly Gly Gly Ile Ala Gly Gly Lys Ala His Phe Asp Arg  
 785 790 795 800  
 Ile Asp Asn Leu Thr Val Gln Ser Asn Gln Ala Lys Lys Gly Gly Gly  
 805 810 815  
 Val Tyr Leu Glu Asp Ala Leu Ile Leu Glu Lys Val Ile Thr Gly Ser  
 820 825 830  
 Val Ser Gln Asn Thr Ala Thr Glu Ser Gly Gly Gly Ile Tyr Ala Lys  
 835 840 845  
 Asp Ile Gln Leu Gln Ala Leu Pro Gly Ser Phe Thr Ile Thr Asp Asn  
 850 855 860  
 Lys Val Glu Thr Ser Leu Thr Thr Ser Thr Asn Leu Tyr Gly Gly Gly  
 865 870 875 880  
 Ile Tyr Ser Ser Gly Ala Val Thr Leu Thr Asn Ile Ser Gly Thr Phe  
 885 890 895  
 Gly Ile Thr Gly Asn Ser Val Ile Asn Thr Ala Thr Ser Gln Asp Ala  
 900 905 910  
 Asp Ile Gln Gly Gly Gly Ile Tyr Ala Thr Thr Ser Leu Ser Ile Asn  
 915 920 925  
 Gln Cys Asn Thr Pro Ile Leu Phe Ser Asn Asn Ser Ala Ala Thr Lys  
 930 935 940  
 Lys Thr Ser Thr Thr Lys Gln Ile Ala Gly Gly Ala Ile Phe Ser Ala  
 945 950 955 960  
 Ala Val Thr Ile Glu Asn Asn Ser Gln Pro Ile Ile Phe Leu Asn Asn  
 965 970 975  
 Ser Ala Lys Ser Glu Ala Thr Thr Ala Ala Thr Ala Gly Asn Lys Asp

980	985	990
Ser Cys Gly Gly Ala Ile Ala Ala Asn Ser Val Thr Leu Thr Asn Asn 995 1000 1005		
Pro Glu Ile Thr Phe Lys Gly Asn Tyr Ala Glu Thr Gly Gly Ala Ile 1010 1015 1020		
Gly Cys Ile Asp Leu Thr Asn Gly Ser Pro Pro Arg Lys Val Ser Ile 1025 1030 1035 1040		
Ala Asp Asn Gly Ser Val Leu Phe Gln Asp Asn Ser Ala Leu Asn Arg 1045 1050 1055		
Gly Gly Ala Ile Tyr Gly Glu Thr Ile Asp Ile Ser Arg Thr Gly Ala 1060 1065 1070		
Thr Phe Ile Gly Asn Ser Ser Lys His Asp Gly Ser Ala Ile Cys Cys 1075 1080 1085		
Ser Thr Ala Leu Thr Leu Ala Pro Asn Ser Gln Leu Ile Phe Glu Asn 1090 1095 1100		
Asn Lys Val Thr Glu Thr Thr Ala Thr Thr Lys Ala Ser Ile Asn Asn 1105 1110 1115 1120		
Leu Gly Ala Ala Ile Tyr Gly Asn Asn Glu Thr Ser Asp Val Thr Ile 1125 1130 1135		
Ser Leu Ser Ala Glu Asn Gly Ser Ile Phe Phe Lys Asn Asn Leu Cys 1140 1145 1150		
Thr Ala Thr Asn Lys Tyr Cys Ser Ile Ala Gly Asn Val Lys Phe Thr 1155 1160 1165		
Ala Ile Glu Ala Ser Ala Gly Lys Ala Ile Ser Phe Tyr Asp Ala Val 1170 1175 1180		
Asn Val Ser Thr Lys Glu Thr Asn Ala Gln Glu Leu Lys Leu Asn Glu 1185 1190 1195 1200		
Lys Ala Thr Ser Thr Gly Thr Ile Leu Phe Ser Gly Glu Leu His Glu 1205 1210 1215		
Asn Lys Ser Tyr Ile Pro Gln Lys Val Thr Phe Ala His Gly Asn Leu 1220 1225 1230		
Ile Leu Gly Lys Asn Ala Glu Leu Ser Val Val Ser Phe Thr Gln Ser 1235 1240 1245		
Pro Gly Thr Thr Ile Thr Met Gly Pro Gly Ser Val Leu Ser Asn His 1250 1255 1260		
Ser Lys Glu Ala Gly Gly Ile Ala Ile Asn Asn Val Ile Ile Asp Phe 1265 1270 1275 1280		
Ser Glu Ile Val Pro Thr Lys Asp Asn Ala Thr Val Ala Pro Pro Thr 1285 1290 1295		
Leu Lys Leu Val Ser Arg Thr Asn Ala Asp Ser Lys Asp Lys Ile Asp 1300 1305 1310		



Ile Thr Gly Thr Val Thr Leu Leu Asp Pro Asn Gly Asn Leu Tyr Gln  
 1315 1320 1325  
 Asn Ser Tyr Leu Gly Glu Asp Arg Asp Ile Thr Leu Phe Asn Ile Asp  
 1330 1335 1340  
 Asn Ser Ala Ser Gly Ala Val Thr Ala Thr Asn Val Thr Leu Gln Gly  
 1345 1350 1355 1360  
 Asn Leu Gly Ala Lys Lys Gly Tyr Leu Gly Thr Trp Asn Leu Asp Pro  
 1365 1370 1375  
 Asn Ser Ser Gly Ser Lys Ile Ile Leu Lys Trp Thr Phe Asp Lys Tyr  
 1380 1385 1390  
 Leu Arg Trp Pro Tyr Ile Pro Arg Asp Asn His Phe Tyr Ile Asn Ser  
 1395 1400 1405  
 Ile Trp Gly Ala Gln Asn Ser Leu Val Thr Val Lys Gln Gly Ile Leu  
 1410 1415 1420  
 Gly Asn Met Leu Asn Asn Ala Arg Phe Glu Asp Pro Ala Phe Asn Asn  
 1425 1430 1435 1440  
 Phe Trp Ala Ser Ala Ile Gly Ser Phe Leu Arg Lys Glu Val Ser Arg  
 1445 1450 1455  
 Asn Ser Asp Ser Phe Thr Tyr His Gly Arg Gly Tyr Thr Ala Ala Val  
 1460 1465 1470  
 Asp Ala Lys Pro Arg Gln Glu Phe Ile Leu Gly Ala Ala Phe Ser Gln  
 1475 1480 1485  
 Val Phe Gly His Ala Glu Ser Glu Tyr His Leu Asp Asn Tyr Lys His  
 1490 1495 1500  
 Lys Gly Ser Gly His Ser Thr Gln Ala Ser Leu Tyr Ala Gly Asn Ile  
 1505 1510 1515 1520  
 Phe Tyr Phe Pro Ala Ile Arg Ser Arg Pro Ile Leu Phe Gln Gly Val  
 1525 1530 1535  
 Ala Thr Tyr Gly Tyr Met Gln His Asp Thr Thr Thr Tyr Tyr Pro Ser  
 1540 1545 1550  
 Ile Glu Glu Lys Asn Met Ala Asn Trp Asp Ser Ile Ala Trp Leu Phe  
 1555 1560 1565  
 Asp Leu Arg Phe Ser Val Asp Leu Lys Glu Pro Gln Pro His Ser Thr  
 1570 1575 1580  
 Ala Arg Leu Thr Phe Tyr Thr Glu Ala Glu Tyr Thr Arg Ile Arg Gln  
 1585 1590 1595 1600  
 Glu Lys Phe Thr Glu Leu Asp Tyr Asp Pro Arg Ser Phe Ser Ala Cys  
 1605 1610 1615  
 Ser Tyr Gly Asn Leu Ala Ile Pro Thr Gly Phe Ser Val Asp Gly Ala  
 1620 1625 1630

Leu Ala Trp Arg Glu Ile Ile Leu Tyr Asn Lys Val Ser Ala Ala Tyr  
 1635 1640 1645  
 Leu Pro Val Ile Leu Arg Asn Asn Pro Lys Ala Thr Tyr Glu Val Leu  
 1650 1655 1660  
 Ser Thr Lys Glu Lys Gly Asn Val Val Asn Val Leu Pro Thr Arg Asn  
 1665 1670 1675 1680  
 Ala Ala Arg Ala Glu Val Ser Ser Gln Ile Tyr Leu Gly Ser Tyr Trp  
 1685 1690 1695  
 Thr Leu Tyr Gly Thr Tyr Thr Ile Asp Ala Ser Met Asn Thr Leu Val  
 1700 1705 1710  
 Gln Met Ala Asn Gly Gly Ile Arg Phe Val Phe  
 1715 1720

<210> 395  
 <211> 1723  
 <212> PRT  
 <213> Chlamydia pneumoniae

<400> 395  
 Met Lys Trp Leu Pro Ala Thr Ala Val Phe Ala Ala Val Leu Pro Ala  
 1 5 10 15  
 Leu Thr Ala Phe Gly Asp Pro Ala Ser Val Glu Ile Ser Thr Ser His  
 20 25 30  
 Thr Gly Ser Gly Asp Pro Thr Ser Asp Ala Ala Leu Thr Gly Phe Thr  
 35 40 45  
 Gln Ser Ser Thr Glu Thr Asp Gly Thr Thr Tyr Thr Ile Val Gly Asp  
 50 55 60  
 Ile Thr Phe Ser Thr Phe Thr Asn Ile Pro Val Pro Val Val Thr Pro  
 65 70 75 80  
 Asp Ala Asn Asp Ser Ser Ser Asn Ser Ser Lys Gly Gly Ser Ser Ser  
 85 90 95  
 Ser Gly Ala Thr Ser Leu Ile Arg Ser Ser Asn Leu His Ser Asp Phe  
 100 105 110  
 Asp Phe Thr Lys Asp Ser Val Leu Asp Leu Tyr His Leu Phe Phe Pro  
 115 120 125  
 Ser Ala Ser Asn Thr Leu Asn Pro Ala Leu Leu Ser Ser Ser Ser Ser  
 130 135 140  
 Gly Gly Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Gly Ser Ala Ser  
 145 150 155 160  
 Ala Val Val Ala Ala Asp Pro Lys Gly Gly Ala Ala Phe Tyr Ser Asn  
 165 170 175  
 Glu Ala Asn Gly Thr Leu Thr Phe Thr Thr Asp Ser Gly Asn Pro Gly  
 180 185 190  
 Ser Leu Thr Leu Gln Asn Leu Lys Met Thr Gly Asp Gly Ala Ala Ile  
 195 200 205  
 Tyr Ser Lys Gly Pro Leu Val Phe Thr Gly Leu Lys Asn Leu Thr Phe  
 210 215 220  
 Thr Gly Asn Glu Ser Gln Lys Ser Gly Gly Ala Ala Tyr Thr Glu Gly  
 225 230 235 240  
 Ala Leu Thr Thr Gln Ala Ile Val Glu Ala Val Thr Phe Thr Gly Asn  
 245 250 255  
 Thr Ser Ala Gly Gln Gly Gly Ala Ile Tyr Val Lys Glu Ala Thr Leu  
 260 265 270  
 Phe Asn Ala Leu Asp Ser Leu Lys Phe Glu Lys Asn Thr Ser Gly Gln  
 275 280 285

Ala	Gly	Gly	Gly	Ile	Tyr	Thr	Glu	Ser	Thr	Leu	Thr	Ile	Ser	Asn	Ile
290						295				300					
Thr	Lys	Ser	Ile	Glu	Phe	Ile	Ser	Asn	Lys	Ala	Ser	Val	Pro	Ala	Pro
305					310					315					320
Ala	Pro	Glu	Pro	Thr	Ser	Pro	Ala	Pro	Ser	Ser	Leu	Ile	Asn	Ser	Thr
				325					330					335	
Thr	Ile	Asp	Thr	Ser	Thr	Leu	Gln	Thr	Arg	Ala	Ala	Ser	Ala	Thr	Pro
		340						345					350		
Ala	Val	Ala	Pro	Val	Ala	Ala	Val	Thr	Pro	Thr	Pro	Ile	Ser	Thr	Gln
		355					360					365			
Glu	Thr	Ala	Gly	Asn	Gly	Gly	Ala	Ile	Tyr	Ala	Lys	Gln	Gly	Ile	Ser
370					375						380				
Ile	Ser	Thr	Phe	Lys	Asp	Leu	Thr	Phe	Lys	Ser	Asn	Ser	Ala	Ser	Val
385					390					395					400
Asp	Ala	Thr	Leu	Thr	Val	Asp	Ser	Ser	Thr	Ile	Gly	Glu	Ser	Gly	Gly
				405					410					415	
Ala	Ile	Phe	Ala	Ala	Asp	Ser	Ile	Gln	Ile	Gln	Gln	Cys	Thr	Gly	Thr
			420					425					430		
Thr	Leu	Phe	Ser	Gly	Asn	Thr	Ala	Asn	Lys	Ser	Gly	Gly	Gly	Ile	Tyr
		435					440					445			
Ala	Val	Gly	Gln	Val	Thr	Leu	Glu	Asp	Ile	Ala	Asn	Leu	Lys	Met	Thr
450						455					460				
Asn	Asn	Thr	Cys	Lys	Gly	Glu	Gly	Gly	Ala	Ile	Tyr	Thr	Lys	Lys	Ala
465					470					475					480
Leu	Thr	Ile	Asn	Asn	Gly	Ala	Ile	Leu	Thr	Thr	Phe	Ser	Gly	Asn	Thr
				485					490					495	
Ser	Thr	Asp	Asn	Gly	Gly	Ala	Ile	Phe	Ala	Val	Gly	Gly	Ile	Thr	Leu
			500					505					510		
Ser	Asp	Leu	Val	Glu	Val	Arg	Phe	Ser	Lys	Asn	Lys	Thr	Gly	Asn	Tyr
		515					520					525			
Ser	Ala	Pro	Ile	Thr	Lys	Ala	Ala	Ser	Asn	Thr	Ala	Pro	Val	Val	Ser
530						535					540				
Ser	Ser	Thr	Thr	Ala	Ala	Ser	Pro	Ala	Val	Pro	Ala	Ala	Ala	Ala	Ala
545					550					555					560
Pro	Val	Thr	Asn	Ala	Ala	Lys	Gly	Gly	Ala	Leu	Tyr	Ser	Thr	Glu	Gly
				565					570					575	
Leu	Thr	Val	Ser	Gly	Ile	Thr	Ser	Ile	Leu	Ser	Phe	Glu	Asn	Asn	Glu
			580					585					590		
Cys	Gln	Asn	Gln	Gly	Gly	Gly	Ala	Tyr	Val	Thr	Lys	Thr	Phe	Gln	Cys
		595					600					605			
Ser	Asp	Ser	His	Arg	Leu	Gln	Phe	Thr	Ser	Asn	Lys	Ala	Ala	Asp	Glu
		610				615					620				
Gly	Gly	Gly	Leu	Tyr	Cys	Gly	Asp	Asp	Val	Thr	Leu	Thr	Asn	Leu	Thr
625					630					635					640
Gly	Lys	Thr	Leu	Phe	Gln	Glu	Asn	Ser	Ser	Glu	Lys	His	Gly	Gly	Gly
				645					650					655	
Leu	Ser	Leu	Ala	Ser	Gly	Lys	Ser	Leu	Thr	Met	Thr	Ser	Leu	Glu	Ser
			660					665					670		
Phe	Cys	Leu	Asn	Ala	Asn	Thr	Ala	Lys	Glu	Asn	Gly	Gly	Gly	Ala	Asn
		675					680					685			
Val	Pro	Glu	Asn	Ile	Val	Leu	Thr	Phe	Thr	Tyr	Thr	Pro	Thr	Pro	Asn
		690				695						700			
Glu	Pro	Ala	Pro	Val	Gln	Gln	Pro	Val	Tyr	Gly	Glu	Ala	Leu	Val	Thr
705					710					715					720
Gly	Asn	Thr	Ala	Thr	Lys	Ser	Gly	Gly	Gly	Ile	Tyr	Thr	Lys	Asn	Ala
				725					730					735	
Ala	Phe	Ser	Asn	Leu	Ser	Ser	Val	Thr	Phe	Asp	Gln	Asn	Thr	Ser	Ser
			740					745					750		
Glu	Asn	Gly	Gly	Ala	Leu	Leu	Thr	Gln	Lys	Ala	Ala	Asp	Lys	Thr	Asp
		755					760					765			
Cys	Ser	Phe	Thr	Tyr	Ile	Thr	Asn	Val	Asn	Ile	Thr	Asn	Asn	Thr	Ala

770		775		780
Thr Gly Asn Gly Gly Gly	Ile Ala Gly Gly Lys	Ala His Phe Asp Arg		
785		790		795
Ile Asp Asn Leu Thr Val	Gln Ser Asn Gln Ala	Lys Lys Gly Gly Gly		800
	805		810	815
Val Tyr Leu Glu Asp Ala	Leu Ile Leu Glu Lys	Val Ile Thr Gly Ser		
	820		825	830
Val Ser Gln Asn Thr Ala	Thr Glu Ser Gly Gly Gly	Ile Tyr Ala Lys		
	835		840	845
Asp Ile Gln Leu Gln Ala	Leu Pro Gly Ser Phe	Thr Ile Thr Asp Asn		
	850		855	860
Lys Val Glu Thr Ser Leu	Thr Thr Ser Thr Asn	Leu Tyr Gly Gly Gly		
865		870		875
Ile Tyr Ser Ser Gly Ala	Val Thr Leu Thr Asn	Ile Ser Gly Thr Phe		880
	885		890	895
Gly Ile Thr Gly Asn Ser	Val Ile Asn Thr Ala	Thr Ser Gln Asp Ala		
	900		905	910
Asp Ile Gln Gly Gly Gly	Ile Tyr Ala Thr Thr	Ser Leu Ser Ile Asn		
	915		920	925
Gln Cys Asn Thr Pro Ile	Leu Phe Ser Asn Asn	Ser Ala Ala Thr Lys		
	930		935	940
Lys Thr Ser Thr Thr Lys	Gln Ile Ala Gly Gly	Ala Ile Phe Ser Ala		
945		950		955
Ala Val Thr Ile Glu Asn	Asn Ser Gln Pro Ile	Ile Phe Leu Asn Asn		
	965		970	975
Ser Ala Lys Ser Glu Ala	Thr Thr Ala Ala Thr	Ala Gly Asn Lys Asp		
	980		985	990
Ser Cys Gly Gly Ala Ile	Ala Ala Asn Ser Val	Thr Leu Thr Asn Asn		
	995		1000	1005
Pro Glu Ile Thr Phe Lys	Gly Asn Tyr Ala Glu	Thr Gly Gly Ala Ile		
	1010		1015	1020
Gly Cys Ile Asp Leu Thr	Asn Gly Ser Pro Pro	Arg Lys Val Ser Ile		
1025		1030		1035
Ala Asp Asn Gly Ser Val	Leu Phe Gln Asp Asn	Ser Ala Leu Asn Arg		
	1045		1050	1055
Gly Gly Ala Ile Tyr Gly	Glu Thr Ile Asp Ile	Ser Arg Thr Gly Ala		
	1060		1065	1070
Thr Phe Ile Gly Asn Ser	Ser Lys His Asp Gly	Ser Ala Ile Cys Cys		
	1075		1080	1085
Ser Thr Ala Leu Thr Leu	Ala Pro Asn Ser Gln	Leu Ile Phe Glu Asn		
	1090		1095	1100
Asn Lys Val Thr Glu Thr	Thr Thr Ala Thr Thr	Lys Ala Ser Ile Asn		
1105		1110		1115
Leu Gly Ala Ala Ile Tyr	Gly Asn Asn Glu Thr	Ser Asp Ile Thr Ile		
	1125		1130	1135
Ser Leu Ser Ala Glu Asn	Gly Ser Ile Phe Phe	Lys Asn Asn Leu Cys		
	1140		1145	1150
Thr Ala Thr Asn Lys Tyr	Cys Ser Ile Ala Gly	Asn Val Lys Phe Thr		
	1155		1160	1165
Ala Ile Glu Ala Ser Ala	Gly Lys Ala Ile Ser	Phe Tyr Asp Ala Val		
	1170		1175	1180
Asn Val Ser Thr Lys Glu	Thr Asn Ala Gln Glu	Leu Lys Leu Asn Glu		
1185		1190		1195
Lys Ala Thr Ser Thr Gly	Thr Ile Leu Phe Ser	Gly Glu Leu His Glu		
	1205		1210	1215
Asn Lys Ser Tyr Ile Pro	Gln Lys Val Thr Phe	Ala His Gly Asn Leu		
	1220		1225	1230
Ile Leu Gly Lys Asn Ala	Glu Leu Ser Val Val	Ser Phe Thr Gln Ser		
	1235		1240	1245
Pro Gly Thr Thr Ile Thr	Met Gly Pro Gly Ser	Val Leu Ser Asn His		
	1250		1255	1260

Ser Lys Glu Ala Gly Gly Ile Ala Ile Asn Asn Val Ile Ile Asp Phe  
 1265 1270 1275 1280  
 Ser Glu Ile Val Pro Thr Lys Asp Asn Ala Thr Val Ala Pro Pro Thr  
 1285 1290 1295  
 Leu Lys Leu Val Ser Arg Thr Asn Ala Asp Ser Lys Asp Lys Ile Asp  
 1300 1305 1310  
 Ile Thr Gly Thr Val Thr Leu Leu Asp Pro Asn Gly Asn Leu Tyr Gln  
 1315 1320 1325  
 Asn Ser Tyr Leu Gly Glu Asp Arg Asp Ile Thr Leu Phe Asn Ile Asp  
 1330 1335 1340  
 Asn Ser Ala Ser Gly Ala Val Thr Ala Thr Asn Val Thr Leu Gln Gly  
 1345 1350 1355 1360  
 Asn Leu Gly Ala Lys Lys Gly Tyr Leu Gly Thr Trp Asn Leu Asp Pro  
 1365 1370 1375  
 Asn Ser Ser Gly Ser Lys Ile Ile Leu Lys Trp Thr Phe Asp Lys Tyr  
 1380 1385 1390  
 Leu Arg Trp Pro Tyr Ile Pro Arg Asp Asn His Phe Tyr Ile Asn Ser  
 1395 1400 1405  
 Ile Trp Gly Ala Gln Asn Ser Leu Val Thr Val Lys Gln Gly Ile Leu  
 1410 1415 1420  
 Gly Asn Met Leu Asn Asn Ala Arg Phe Glu Asp Pro Ala Phe Asn Asn  
 1425 1430 1435 1440  
 Phe Trp Ala Ser Ala Ile Gly Ser Phe Leu Arg Lys Glu Val Ser Arg  
 1445 1450 1455  
 Asn Ser Asp Ser Phe Thr Tyr His Gly Arg Gly Tyr Thr Ala Ala Val  
 1460 1465 1470  
 Asp Ala Lys Pro Arg Gln Glu Phe Ile Leu Gly Ala Ala Phe Ser Gln  
 1475 1480 1485  
 Val Phe Gly His Ala Glu Ser Glu Tyr His Leu Asp Asn Tyr Lys His  
 1490 1495 1500  
 Lys Gly Ser Gly His Ser Thr Gln Ala Ser Leu Tyr Ala Gly Asn Ile  
 1505 1510 1515 1520  
 Phe Tyr Phe Pro Ala Ile Arg Ser Arg Pro Ile Leu Phe Gln Gly Val  
 1525 1530 1535  
 Ala Thr Tyr Gly Tyr Met Gln His Asp Thr Thr Thr Tyr Tyr Pro Ser  
 1540 1545 1550  
 Ile Glu Glu Lys Asn Met Ala Asn Trp Asp Ser Ile Ala Trp Leu Phe  
 1555 1560 1565  
 Asp Leu Arg Phe Ser Val Asp Leu Lys Glu Pro Gln Pro His Ser Thr  
 1570 1575 1580  
 Ala Arg Leu Thr Phe Tyr Thr Glu Ala Glu Tyr Thr Arg Ile Arg Gln  
 1585 1590 1595 1600  
 Glu Lys Phe Thr Glu Leu Asp Tyr Asp Pro Arg Ser Phe Ser Ala Cys  
 1605 1610 1615  
 Ser Tyr Gly Asn Leu Ala Ile Pro Thr Gly Phe Ser Val Asp Gly Ala  
 1620 1625 1630  
 Leu Ala Trp Arg Glu Ile Ile Leu Tyr Asn Lys Val Ser Ala Ala Tyr  
 1635 1640 1645  
 Leu Pro Val Ile Leu Arg Asn Asn Pro Lys Ala Thr Tyr Glu Val Leu  
 1650 1655 1660  
 Ser Thr Lys Glu Lys Gly Asn Val Val Asn Val Leu Pro Thr Arg Asn  
 1665 1670 1675 1680  
 Ala Ala Arg Ala Glu Val Ser Ser Gln Ile Tyr Leu Gly Ser Tyr Trp  
 1685 1690 1695  
 Thr Leu Tyr Gly Thr Tyr Thr Ile Asp Ala Ser Met Asn Thr Leu Val  
 1700 1705 1710  
 Gln Met Ala Asn Gly Gly Ile Arg Phe Val Phe  
 1715 1720

<211> 1252

<212> PRT

<213> Chlamydia pneumoniae

<400> 396

Met Leu Lys Cys Pro Glu Arg Val Ser Val Lys Lys Lys Glu Asp Ile  
5 10 15

Pro Asp Leu Pro Asn Leu Ile Glu Ile Gln Ile Lys Ser Tyr Lys Gln  
20 25 30

Phe Leu Gln Ile Gly Lys Leu Ala Glu Glu Arg Glu Asn Ile Gly Leu  
35 40 45

Glu Glu Val Phe Arg Glu Ile Phe Pro Ile Lys Ser Tyr Asn Glu Ala  
50 55 60

Thr Val Leu Glu Tyr Leu Ser Tyr Asn Leu Gly Val Pro Lys Tyr Ser  
65 70 75 80

Pro Glu Glu Cys Ile Arg Arg Gly Ile Thr Tyr Ser Val Thr Leu Lys  
85 90 95

Val Arg Phe Arg Leu Thr Asp Glu Thr Gly Ile Lys Glu Glu Glu Val  
100 105 110

Tyr Met Gly Thr Ile Pro Leu Met Thr Asp Lys Gly Thr Phe Ile Ile  
115 120 125

Asn Gly Ala Glu Arg Val Val Val Ser Gln Val His Arg Ser Pro Gly  
130 135 140

Ile Asn Phe Glu Gln Glu Lys His Ser Lys Gly Asn Ile Leu Phe Ser  
145 150 155 160

Phe Arg Ile Ile Pro Tyr Arg Gly Ser Trp Leu Glu Ala Ile Phe Asp  
165 170 175

Ile Asn Asp Leu Ile Tyr Ile His Ile Asp Arg Lys Lys Arg Arg Arg  
180 185 190

Lys Ile Leu Ala Ile Thr Phe Ile Arg Ala Leu Gly Tyr Ser Ser Asp  
195 200 205

Ala Asp Ile Ile Glu Glu Phe Phe Thr Ile Gly Glu Ser Ser Leu Arg  
210 215 220

Ser Glu Lys Asp Phe Ala Leu Leu Val Gly Arg Ile Leu Ala Asp Asn  
225 230 235 240

Ile Ile Asp Glu Ala Ser Ser Leu Val Tyr Gly Lys Ala Gly Glu Lys  
245 250 255

Leu Ser Thr Ala Met Leu Lys Arg Met Leu Asp Ala Gly Ile Ala Ser  
260 265 270

Val Lys Ile Ala Val Asp Ala Asp Glu Asn His Pro Ile Ile Lys Met  
275 280 285

Leu Ala Lys Asp Pro Thr Asp Ser Tyr Glu Ala Ala Leu Lys Asp Phe  
290 295 300

Tyr Arg Arg Leu Arg Pro Gly Glu Pro Ala Thr Leu Ala Asn Ala Arg  
 305 310 315 320  
 Ser Thr Ile Met Arg Leu Phe Phe Asp Pro Lys Arg Tyr Asn Leu Gly  
 325 330 335  
 Arg Val Gly Arg Tyr Lys Leu Asn Arg Lys Leu Gly Phe Ser Ile Asp  
 340 345 350  
 Asp Glu Ala Leu Ser Gln Val Thr Leu Arg Lys Glu Asp Val Ile Gly  
 355 360 365  
 Ala Leu Lys Tyr Leu Ile Arg Leu Lys Met Gly Asp Glu Lys Ala Cys  
 370 375 380  
 Val Asp Asp Ile Asp His Leu Ala Asn Arg Arg Val Arg Ser Val Gly  
 385 390 395 400  
 Glu Leu Ile Gln Asn Gln Cys Arg Ser Gly Leu Ala Arg Met Glu Lys  
 405 410 415  
 Ile Val Arg Glu Arg Met Asn Leu Phe Asp Phe Ser Ser Asp Thr Leu  
 420 425 430  
 Thr Pro Gly Lys Val Val Ser Ala Lys Gly Leu Ala Ser Val Leu Lys  
 435 440 445  
 Asp Phe Phe Gly Arg Ser Gln Leu Ser Gln Phe Met Asp Gln Thr Asn  
 450 455 460  
 Pro Val Ala Glu Leu Thr His Lys Arg Arg Leu Ser Ala Leu Gly Pro  
 465 470 475 480  
 Gly Gly Leu Asn Arg Glu Arg Ala Gly Phe Glu Val Arg Asp Val His  
 485 490 495  
 Ala Ser His Tyr Gly Arg Ile Cys Pro Ile Glu Thr Pro Glu Gly Pro  
 500 505 510  
 Asn Ile Gly Leu Ile Thr Ser Leu Ser Ser Phe Ala Lys Ile Asn Glu  
 515 520 525  
 Phe Gly Phe Ile Glu Thr Pro Tyr Arg Ile Val Arg Asp Gly Ile Val  
 530 535 540  
 Thr Asp Glu Ile Glu Tyr Met Thr Ala Asp Val Glu Glu Glu Cys Val  
 545 550 555 560  
 Ile Ala Gln Ala Ser Ala Ser Leu Asp Glu Tyr Asn Met Phe Thr Glu  
 565 570 575  
 Pro Val Cys Trp Val Arg Tyr Ala Gly Glu Ala Phe Glu Ala Asp Thr  
 580 585 590  
 Ser Thr Val Thr His Met Asp Val Ser Pro Lys Gln Leu Val Ser Ile  
 595 600 605  
 Val Thr Gly Leu Ile Pro Phe Leu Glu His Asp Asp Ala Asn Arg Ala  
 610 615 620

Leu 625	Met	Gly	Ser	Asn	Met 630	Gln	Arg	Gln	Ala	Val 635	Pro	Leu	Leu	Lys	Thr 640
Glu	Ala	Pro	Val	Val 645	Gly	Thr	Gly	Leu	Glu 650	Cys	Arg	Ala	Ala	Lys 655	Asp
Ser	Gly	Ala	Ile 660	Val	Val	Ala	Glu	Glu 665	Asp	Gly	Val	Val	Asp 670	Phe	Val
Asp	Gly	Tyr 675	Lys	Val	Val	Val	Ala 680	Ala	Lys	His	Asn	Pro 685	Thr	Ile	Lys
Arg	Thr 690	Tyr	His	Leu	Lys	Lys 695	Phe	Leu	Arg	Ser	Asn 700	Ser	Gly	Thr	Cys
Ile 705	Asn	Gln	Gln	Pro	Leu 710	Cys	Ala	Val	Gly	Asp 715	Val	Ile	Thr	Lys	Gly 720
Asp	Val	Ile	Ala	Asp 725	Gly	Pro	Ala	Thr	Asp 730	Arg	Gly	Glu	Leu	Ala 735	Leu
Gly	Lys	Asn	Val 740	Leu	Val	Ala	Phe	Met 745	Pro	Trp	Tyr	Gly	Tyr 750	Asn	Phe
Glu	Asp 755	Ala	Ile	Ile	Ile	Ser	Glu 760	Lys	Leu	Ile	Arg	Glu 765	Asp	Ala	Tyr
Thr	Ser 770	Ile	Tyr	Ile	Glu	Glu 775	Phe	Glu	Leu	Thr	Ala 780	Arg	Asp	Thr	Lys
Leu 785	Gly	Lys	Glu	Glu	Ile 790	Thr	Arg	Asp	Ile	Pro 795	Asn	Val	Ser	Asp	Glu 800
Val	Leu	Ala	Asn 805	Leu	Gly	Glu	Asp	Gly	Ile 810	Ile	Arg	Ile	Gly	Ala 815	Glu
Val	Lys	Pro	Gly 820	Asp	Ile	Leu	Val	Gly 825	Lys	Ile	Thr	Pro	Lys 830	Ser	Glu
Thr	Glu 835	Leu	Ala	Pro	Glu	Glu	Arg 840	Leu	Leu	Arg	Ala	Ile 845	Phe	Gly	Glu
Lys	Ala 850	Ala	Asp	Val	Lys	Asp 855	Ala	Ser	Leu	Thr	Val 860	Pro	Pro	Gly	Thr
Glu 865	Gly	Val	Val	Met	Asp 870	Val	Lys	Val	Phe	Ser 875	Arg	Lys	Asp	Arg	Leu 880
Ser	Lys	Ser	Asp 885	Asp	Glu	Leu	Val	Glu	Glu 890	Ala	Val	His	Leu	Lys 895	Asp
Leu	Gln	Lys	Gly 900	Tyr	Lys	Asn	Gln	Val 905	Ala	Thr	Leu	Lys	Thr 910	Glu	Tyr
Arg	Glu 915	Lys	Leu	Gly	Ala	Leu	Leu 920	Leu	Asn	Glu	Lys	Ala 925	Pro	Ala	Ala
Ile 930	Ile	His	Arg	Arg	Thr	Ala 935	Glu	Ile	Val	Val	His 940	Glu	Gly	Leu	Leu
Phe	Asp	Gln	Glu	Thr	Ile	Glu	Arg	Ile	Glu	Gln	Glu	Asp	Leu	Val	Asp



945		950		955		960
Leu Leu Met Pro	Asn Cys Glu Met Tyr	Glu Val Leu Lys Gly	Leu Leu			
	965	970	975			
Ser Asp Tyr Glu Thr	Ala Leu Gln Arg	Leu Glu Ile Asn Tyr	Lys Thr			
	980	985	990			
Glu Val Glu His Ile	Arg Glu Gly Asp	Ala Asp Leu Asp	His Gly Val			
	995	1000	1005			
Ile Arg Gln Val Lys	Val Tyr Val Ala Ser	Lys Arg Lys Leu	Gln Val			
	1010	1015	1020			
Gly Asp Lys Met Ala	Gly Arg His Gly	Asn Lys Gly Val	Val Ser Lys			
	1025	1030	1035	1040		
Ile Val Pro Glu Ala	Asp Met Pro Tyr	Leu Ser Asn Gly	Glu Thr Val			
	1045	1050	1055			
Gln Met Ile Leu Asn	Pro Leu Gly Val	Pro Ser Arg Met	Asn Leu Gly			
	1060	1065	1070			
Gln Val Leu Glu Thr	His Leu Gly Tyr	Ala Ala Lys Thr	Ala Gly Ile			
	1075	1080	1085			
Tyr Val Lys Thr Pro	Val Phe Glu Gly	Phe Pro Glu Gln	Arg Ile Trp			
	1090	1095	1100			
Asp Met Met Ile Glu	Gln Gly Leu Pro	Glu Asp Gly Lys	Ser Phe Leu			
	1105	1110	1115	1120		
Tyr Asp Gly Lys Thr	Gly Glu Arg Phe	Asp Asn Lys Val	Val Ile Gly			
	1125	1130	1135			
Tyr Ile Tyr Met Leu	Lys Leu Ser His	Leu Ile Ala Asp	Lys Ile His			
	1140	1145	1150			
Ala Arg Ser Ile Gly	Pro Tyr Ser Leu	Val Thr Gln Gln	Pro Leu Gly			
	1155	1160	1165			
Gly Lys Ala Gln Met	Gly Gly Gln Arg	Phe Gly Glu Met	Glu Val Trp			
	1170	1175	1180			
Ala Leu Glu Ala Tyr	Gly Val Ala His	Met Leu Gln Glu	Ile Leu Thr			
	1185	1190	1195	1200		
Val Lys Ser Asp Asp	Val Ser Gly Arg	Thr Arg Ile Tyr	Glu Ser Ile			
	1205	1210	1215			
Val Lys Gly Glu Asn	Leu Leu Arg Ser	Gly Thr Pro Glu	Ser Phe Asn			
	1220	1225	1230			
Val Leu Ile Lys Glu	Met Gln Gly Leu	Gly Leu Asp Val	Arg Pro Met			
	1235	1240	1245			
Val Val Asp Ala						
	1250					

&lt;211&gt; 224

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 397

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Met Thr Ser Trp Ile Glu Leu Leu Asp Lys Gln Ile Glu Asp Gln His
      5              10              15

Met Leu Lys His Glu Phe Tyr Gln Arg Trp Ser Glu Gly Lys Leu Glu
      20              25              30

Lys Gln Gln Leu Gln Ala Tyr Ala Lys Asp Tyr Tyr Leu His Ile Lys
      35              40              45

Ala Phe Pro Cys Tyr Leu Ser Ala Leu His Ala Arg Cys Asp Asp Leu
      50              55              60

Gln Ile Arg Arg Gln Ile Leu Glu Asn Leu Met Asp Glu Glu Ala Gly
      65              70              75              80

Asn Pro Asn His Ile Asp Leu Trp Arg Gln Phe Ala Leu Ser Leu Gly
      85              90              95

Val Ser Glu Glu Glu Leu Ala Asn His Glu Phe Ser Gln Ala Ala Gln
      100             105             110

Asp Met Val Ala Thr Phe Arg Arg Leu Cys Asp Met Pro Gln Leu Ala
      115             120             125

Val Gly Leu Gly Ala Leu Tyr Thr Tyr Glu Ile Gln Ile Pro Gln Val
      130             135             140

Cys Val Glu Lys Ile Arg Gly Leu Lys Glu Tyr Phe Gly Val Ser Ala
      145             150             155             160

Arg Gly Tyr Ala Tyr Phe Thr Val His Gln Glu Ala Asp Ile Lys His
      165             170             175

Ala Ser Glu Glu Lys Glu Met Leu Gln Thr Leu Val Gly Arg Glu Asn
      180             185             190

Pro Asp Ala Val Leu Gln Gly Ser Gln Glu Val Leu Asp Thr Leu Trp
      195             200             205

Asn Phe Leu Ser Ser Phe Ile Asn Ser Thr Glu Pro Cys Ser Cys Lys
      210             215             220

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&lt;210&gt; 398

&lt;211&gt; 556

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 398

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Met Ser Lys Leu Ile Arg Arg Val Val Thr Val Leu Ala Leu Thr Ser
      5              10              15

Met Ala Ser Cys Phe Ala Ser Gly Gly Ile Glu Ala Ala Val Ala Glu
      20              25              30

Ser Leu Ile Thr Lys Ile Val Ala Ser Ala Glu Thr Lys Pro Ala Pro

```

35	40	45
Val Pro Met Thr Ala Lys Lys	Val Arg Leu Val Arg Arg Asn Lys Gln	
50	55	60
Pro Val Glu Gln Lys Ser Arg Gly Ala Phe Cys Asp Lys Glu Phe Tyr		
65	70	75
Pro Cys Glu Glu Gly Arg Cys Gln Pro Val Glu Ala Gln Gln Glu Ser		
85	90	95
Cys Tyr Gly Arg Leu Tyr Ser Val Lys Val Asn Asp Asp Cys Asn Val		
100	105	110
Glu Ile Cys Gln Ser Val Pro Glu Tyr Ala Thr Val Gly Ser Pro Tyr		
115	120	125
Pro Ile Glu Ile Leu Ala Ile Gly Lys Lys Asp Cys Val Asp Val Val		
130	135	140
Ile Thr Gln Gln Leu Pro Cys Glu Ala Glu Phe Val Ser Ser Asp Pro		
145	150	155
Glu Thr Thr Pro Thr Ser Asp Gly Lys Leu Val Trp Lys Ile Asp Arg		
165	170	175
Leu Gly Ala Gly Asp Lys Cys Lys Ile Thr Val Trp Val Lys Pro Leu		
180	185	190
Lys Glu Gly Cys Cys Phe Thr Ala Ala Thr Val Cys Ala Cys Pro Glu		
195	200	205
Leu Arg Ser Tyr Thr Lys Cys Gly Gln Pro Ala Ile Cys Ile Lys Gln		
210	215	220
Glu Gly Pro Asp Cys Ala Cys Leu Arg Cys Pro Val Cys Tyr Lys Ile		
225	230	235
Glu Val Val Asn Thr Gly Ser Ala Ile Ala Arg Asn Val Thr Val Asp		
245	250	255
Asn Pro Val Pro Asp Gly Tyr Ser His Ala Ser Gly Gln Arg Val Leu		
260	265	270
Ser Phe Asn Leu Gly Asp Met Arg Pro Gly Asp Lys Lys Val Phe Thr		
275	280	285
Val Glu Phe Cys Pro Gln Arg Arg Gly Gln Ile Thr Asn Val Ala Thr		
290	295	300
Val Thr Tyr Cys Gly Gly His Lys Cys Ser Ala Asn Val Thr Thr Val		
305	310	315
Val Asn Glu Pro Cys Val Gln Val Asn Ile Ser Gly Ala Asp Trp Ser		
325	330	335
Tyr Val Cys Lys Pro Val Glu Tyr Ser Ile Ser Val Ser Asn Pro Gly		
340	345	350
Asp Leu Val Leu His Asp Val Val Ile Gln Asp Thr Leu Pro Ser Gly		
355	360	365

Val Thr Val Leu Glu Ala Pro Gly Gly Glu Ile Cys Cys Asn Lys Val  
 370 375 380  
 Val Trp Arg Ile Lys Glu Met Cys Pro Gly Glu Thr Leu Gln Phe Lys  
 385 390 395 400  
 Leu Val Val Lys Ala Gln Val Pro Gly Arg Phe Thr Asn Gln Val Ala  
 405 410 415  
 Val Thr Ser Glu Ser Asn Cys Gly Thr Cys Thr Ser Cys Ala Glu Thr  
 420 425 430  
 Thr Thr His Trp Lys Gly Leu Ala Ala Thr His Met Cys Val Leu Asp  
 435 440 445  
 Thr Asn Asp Pro Ile Cys Val Gly Glu Asn Thr Val Tyr Arg Ile Cys  
 450 455 460  
 Val Thr Asn Arg Gly Ser Ala Glu Asp Thr Asn Val Ser Leu Ile Leu  
 465 470 475 480  
 Lys Phe Ser Lys Glu Leu Gln Pro Ile Ala Ser Ser Gly Pro Thr Lys  
 485 490 495  
 Gly Thr Ile Ser Gly Asn Thr Val Val Phe Asp Ala Leu Pro Lys Leu  
 500 505 510  
 Gly Ser Lys Glu Ser Val Glu Phe Ser Val Thr Leu Lys Gly Ile Ala  
 515 520 525  
 Pro Gly Asp Ala Arg Gly Glu Ala Ile Leu Ser Ser Asp Thr Leu Thr  
 530 535 540  
 Ser Pro Val Ser Asp Thr Glu Asn Thr His Val Tyr  
 545 550 555

&lt;210&gt; 399

&lt;211&gt; 461

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 399

Met Thr Gln Glu Phe Asp Cys Val Val Ile Gly Ala Gly Pro Ser Gly  
 5 10 15  
 Tyr Val Ala Ala Ile Thr Ala Ala Gln Ser Lys Leu Arg Thr Ala Leu  
 20 25 30  
 Ile Glu Glu Asp Gln Ala Gly Gly Thr Cys Leu Asn Arg Gly Cys Ile  
 35 40 45  
 Pro Ser Lys Ala Leu Ile Ala Gly Ala Asn Val Val Ser His Ile Lys  
 50 55 60  
 His Ala Glu Gln Phe Gly Ile His Val Asp Gly Tyr Thr Ile Asp Tyr  
 65 70 75 80  
 Pro Ala Met Ala Lys Arg Lys Asn Thr Val Val Gln Gly Ile Arg Gln  
 85 90 95

Gly	Leu	Glu	Gly	Leu	Ile	Arg	Ser	Asn	Lys	Ile	Thr	Val	Leu	Lys	Gly		
			100					105					110				
Thr	Gly	Ser	Leu	Val	Ser	Ser	Thr	Glu	Val	Lys	Val	Ile	Gly	Gln	Asp		
		115					120					125					
Thr	Thr	Ile	Ile	Lys	Ala	Asn	His	Ile	Ile	Leu	Ala	Thr	Gly	Ser	Glu		
	130					135					140						
Pro	Arg	Pro	Phe	Pro	Gly	Val	Pro	Phe	Ser	Ser	Arg	Ile	Leu	Ser	Ser		
145					150					155					160		
Thr	Gly	Ile	Leu	Glu	Leu	Glu	Val	Leu	Pro	Lys	Lys	Leu	Ala	Ile	Ile		
			165					170						175			
Gly	Gly	Gly	Val	Ile	Gly	Cys	Glu	Phe	Ala	Ser	Leu	Phe	His	Thr	Leu		
			180					185					190				
Gly	Val	Glu	Ile	Thr	Val	Ile	Glu	Ala	Leu	Asp	His	Ile	Leu	Ala	Val		
		195					200					205					
Asn	Asn	Lys	Glu	Val	Ser	Gln	Thr	Val	Thr	Asn	Lys	Phe	Thr	Lys	Gln		
	210					215					220						
Gly	Ile	Arg	Ile	Leu	Thr	Lys	Ala	Ser	Ile	Ser	Ala	Ile	Glu	Glu	Ser		
225					230					235					240		
Gln	Asn	Gln	Val	Arg	Ile	Thr	Val	Asn	Asp	Gln	Val	Glu	Glu	Phe	Asp		
			245					250						255			
Tyr	Val	Leu	Val	Ala	Ile	Gly	Arg	Gln	Phe	Asn	Thr	Ala	Ser	Ile	Gly		
		260						265					270				
Leu	Asp	Asn	Ala	Gly	Val	Ile	Arg	Asp	Asp	Arg	Gly	Val	Ile	Pro	Val		
		275					280					285					
Asp	Glu	Thr	Met	Arg	Thr	Asn	Val	Pro	Asn	Ile	Tyr	Ala	Ile	Gly	Asp		
	290					295					300						
Ile	Thr	Gly	Lys	Trp	Leu	Leu	Ala	His	Val	Ala	Ser	His	Gln	Gly	Val		
305					310					315					320		
Ile	Ala	Ala	Lys	Asn	Ile	Ser	Gly	His	His	Glu	Val	Met	Asp	Tyr	Ser		
			325					330					335				
Ala	Ile	Pro	Ser	Val	Ile	Phe	Thr	His	Pro	Glu	Ile	Ala	Met	Val	Gly		
		340						345					350				
Leu	Ser	Leu	Gln	Glu	Ala	Glu	Gln	Gln	Asn	Leu	Pro	Ala	Lys	Leu	Thr		
		355					360					365					
Lys	Phe	Pro	Phe	Lys	Ala	Ile	Gly	Lys	Ala	Val	Ala	Leu	Gly	Ala	Ser		
	370					375					380						
Asp	Gly	Phe	Ala	Ala	Ile	Val	Ser	His	Glu	Ile	Thr	Gln	Gln	Ile	Leu		
385					390					395					400		
Gly	Ala	Tyr	Val	Ile	Gly	Pro	His	Ala	Ser	Ser	Leu	Ile	Gly	Glu	Met		
			405					410						415			

Thr Leu Ala Ile Arg Asn Glu Leu Thr Leu Pro Cys Ile Tyr Glu Thr  
                     420                    425                    430

Val His Ala His Pro Thr Leu Ser Glu Val Trp Ala Glu Gly Ala Leu  
                     435                    440                    445

Leu Ala Thr Asn His Pro Leu His Phe Pro Pro Lys Ser  
                     450                    455                    460

<210> 400  
 <211> 544  
 <212> PRT  
 <213> Chlamydia pneumoniae

<400> 400

Met Ala Ala Lys Asn Ile Lys Tyr Asn Glu Glu Ala Arg Lys Lys Ile  
                     5                    10                    15

His Lys Gly Val Lys Thr Leu Ala Glu Ala Val Lys Val Thr Leu Gly  
                     20                    25                    30

Pro Lys Gly Arg His Val Val Ile Asp Lys Ser Phe Gly Ser Pro Gln  
                     35                    40                    45

Val Thr Lys Asp Gly Val Thr Val Ala Lys Glu Ile Glu Leu Glu Asp  
                     50                    55                    60

Lys His Glu Asn Met Gly Ala Gln Met Val Lys Glu Val Ala Ser Lys  
                     65                    70                    75                    80

Thr Ala Asp Lys Ala Gly Asp Gly Thr Thr Thr Ala Thr Val Leu Ala  
                     85                    90                    95

Glu Ala Ile Tyr Ser Glu Gly Leu Arg Asn Val Thr Ala Gly Ala Asn  
                     100                    105                    110

Pro Met Asp Leu Lys Arg Gly Ile Asp Lys Ala Val Lys Val Val Val  
                     115                    120                    125

Asp Glu Leu Lys Lys Ile Ser Lys Pro Val Gln His His Lys Glu Ile  
                     130                    135                    140

Ala Gln Val Ala Thr Ile Ser Ala Asn Asn Asp Ser Glu Ile Gly Asn  
                     145                    150                    155                    160

Leu Ile Ala Glu Ala Met Glu Lys Val Gly Lys Asn Gly Ser Ile Thr  
                     165                    170                    175

Val Glu Glu Ala Lys Gly Phe Glu Thr Val Leu Asp Val Val Glu Gly  
                     180                    185                    190

Met Asn Phe Asn Arg Gly Tyr Leu Ser Ser Tyr Phe Ser Thr Asn Pro  
                     195                    200                    205

Glu Thr Gln Glu Cys Val Leu Glu Asp Ala Leu Ile Leu Ile Tyr Asp  
                     210                    215                    220

Lys Lys Ile Ser Gly Ile Lys Asp Phe Leu Pro Val Leu Gln Gln Val  
                     225                    230                    235                    240

Ala	Glu	Ser	Gly	Arg 245	Pro	Leu	Leu	Ile	Ile 250	Ala	Glu	Glu	Ile	Glu 255	Gly
Glu	Ala	Leu	Ala 260	Thr	Leu	Val	Val	Asn 265	Arg	Leu	Arg	Ala	Gly 270	Phe	Arg
Val	Cys	Ala 275	Val	Lys	Ala	Pro	Gly 280	Phe	Gly	Asp	Arg	Arg 285	Lys	Ala	Met
Leu	Glu 290	Asp	Ile	Ala	Ile	Leu 295	Thr	Gly	Gly	Gln	Leu 300	Val	Ser	Glu	Glu
Leu 305	Gly	Met	Lys	Leu	Glu 310	Asn	Thr	Thr	Leu	Ala 315	Met	Leu	Gly	Lys	Ala 320
Lys	Lys	Val	Ile	Val 325	Thr	Lys	Glu	Asp	Thr 330	Thr	Ile	Val	Glu	Gly 335	Leu
Gly	Asn	Lys	Pro 340	Asp	Ile	Gln	Ala	Arg 345	Cys	Asp	Asn	Ile	Lys 350	Lys	Gln
Ile	Glu	Asp 355	Ser	Thr	Ser	Asp	Tyr 360	Asp	Lys	Glu	Lys	Leu 365	Gln	Glu	Arg
Leu	Ala 370	Lys	Leu	Ser	Gly	Gly 375	Val	Ala	Val	Ile	Arg 380	Val	Gly	Ala	Ala
Thr 385	Glu	Ile	Glu	Met	Lys 390	Glu	Lys	Lys	Asp	Arg 395	Val	Asp	Asp	Ala	Gln 400
His	Ala	Thr	Ile	Ala 405	Ala	Val	Glu	Glu	Gly 410	Ile	Leu	Pro	Gly	Gly 415	Gly
Thr	Ala	Leu	Val 420	Arg	Cys	Ile	Pro	Thr 425	Leu	Glu	Ala	Phe	Leu 430	Pro	Met
Leu	Ala	Asn 435	Glu	Asp	Glu	Ala	Ile 440	Gly	Thr	Arg	Ile	Ile 445	Leu	Lys	Ala
Leu	Thr 450	Ala	Pro	Leu	Lys	Gln 455	Ile	Ala	Ser	Asn	Ala 460	Gly	Lys	Glu	Gly
Ala 465	Ile	Ile	Cys	Gln	Gln 470	Val	Leu	Ala	Arg	Ser 475	Ala	Asn	Glu	Gly	Tyr 480
Asp	Ala	Leu	Arg	Asp 485	Ala	Tyr	Thr	Asp	Met 490	Ile	Asp	Ala	Gly	Ile 495	Leu
Asp	Pro	Thr	Lys 500	Val	Thr	Arg	Ser	Ala 505	Leu	Glu	Ser	Ala	Ala 510	Ser	Ile
Ala	Gly	Leu	Leu	Leu	Thr	Thr	Glu 520	Ala	Leu	Ile	Ala	Asp 525	Ile	Pro	Glu
Glu	Lys 530	Ser	Ser	Ser	Ala	Pro 535	Ala	Met	Pro	Ser	Ala 540	Gly	Met	Asp	Tyr

<210>	401
<211>	664
<212>	PRT

<213> Chlamydia pneumoniae

<400> 401

Met	Glu	Lys	Val	Ser 5	Ser	Tyr	Pro	Ser	Val 10	Pro	Leu	Pro	Leu	Gly 15	Ala
Ser	Lys	Ile	Ser 20	Pro	Asn	Arg	Tyr	Arg 25	Phe	Ala	Leu	Tyr	Ala 30	Ser	Gln
Ala	Thr	Glu 35	Val	Ile	Leu	Ala	Leu 40	Thr	Asp	Glu	Asn	Ser 45	Glu	Val	Ile
Glu	Val 50	Pro	Leu	Tyr	Pro	Asp 55	Thr	His	Arg	Thr	Gly 60	Ala	Ile	Trp	His
Ile	Glu	Ile	Glu	Gly 70	Ile	Ser	Asp	Gln	Ser	Ser 75	Tyr	Ala	Phe	Arg	Val 80
His	Gly	Pro	Lys	Lys 85	His	Gly	Met	Gln	Tyr 90	Ser	Phe	Lys	Glu	Tyr 95	Leu
Ala	Asp	Pro	Tyr 100	Ala	Lys	Asn	Ile	His 105	Ser	Pro	Gln	Ser	Phe 110	Gly	Ser
Arg	Lys	Lys 115	Gln	Gly	Asp	Tyr	Ala 120	Phe	Cys	Tyr	Leu	Lys 125	Glu	Glu	Pro
Phe	Pro 130	Trp	Asp	Gly	Asp	Gln 135	Pro	Leu	His	Leu	Pro 140	Lys	Glu	Glu	Met
Ile 145	Ile	Tyr	Glu	Met	His 150	Val	Arg	Ser	Phe	Thr 155	Gln	Ser	Ser	Ser	Ser 160
Arg	Val	His	Ala	Pro 165	Gly	Thr	Phe	Leu	Gly 170	Ile	Ile	Glu	Lys	Ile 175	Asp
His	Leu	His	Lys 180	Leu	Gly	Ile	Asn	Ala 185	Val	Glu	Leu	Leu	Pro 190	Ile	Phe
Glu	Phe	Asp 195	Glu	Thr	Ala	His	Pro 200	Phe	Arg	Asn	Ser	Lys 205	Phe	Pro	Tyr
Leu	Cys 210	Asn	Tyr	Trp	Gly	Tyr 215	Ala	Pro	Leu	Asn	Phe 220	Phe	Ser	Pro	Cys
Arg 225	Arg	Tyr	Ala	Tyr	Ala 230	Ser	Asp	Pro	Cys	Ala 235	Pro	Ser	Arg	Glu	Phe 240
Lys	Thr	Leu	Val	Lys 245	Thr	Leu	His	Gln	Glu 250	Gly	Ile	Glu	Val	Ile 255	Leu
Asp	Val	Val	Phe 260	Asn	His	Thr	Gly	Leu 265	Gln	Gly	Thr	Thr	Cys 270	Ser	Leu
Pro	Trp	Ile 275	Asp	Thr	Pro	Ser	Tyr 280	Tyr	Ile	Leu	Asp	Ala 285	Gln	Gly	His
Phe 290	Thr	Asn	Tyr	Ser	Gly	Cys 295	Gly	Asn	Thr	Leu	Asn 300	Thr	Asn	Arg	Ala
Pro	Thr	Thr	Gln	Trp	Ile	Leu	Asp	Ile	Leu	Arg	Tyr	Trp	Val	Glu	Glu



305		310		315		320
Met His Val Asp Gly Phe Arg Phe Asp Leu Ala Ser Val Phe Ser Arg						
		325		330		335
Gly Pro Ser Gly Ser Pro Leu Gln Phe Ala Pro Val Leu Glu Ala Ile						
		340		345		350
Ser Phe Asp Pro Leu Leu Ala Ser Thr Lys Ile Ile Ala Glu Pro Trp						
		355		360		365
Asp Ala Gly Gly Leu Tyr Gln Val Gly Tyr Phe Pro Thr Leu Ser Pro						
		370		375		380
Arg Trp Ser Glu Trp Asn Gly Pro Tyr Arg Asp Asn Val Lys Ala Phe						
		385		390		400
Leu Asn Gly Asp Gln Asn Leu Ile Gly Thr Phe Ala Ser Arg Ile Ser						
		405		410		415
Gly Ser Gln Asp Ile Tyr Pro His Gly Ser Pro Thr Asn Ser Ile Asn						
		420		425		430
Tyr Val Ser Cys His Asp Gly Phe Thr Leu Cys Asp Thr Val Thr Tyr						
		435		440		445
Asn His Lys His Asn Glu Ala Asn Gly Glu Asp Asn Arg Asp Gly Thr						
		450		455		460
Asp Ala Asn Tyr Ser Tyr Asn Phe Gly Thr Glu Gly Lys Thr Glu Asp						
		465		470		480
Pro Gly Ile Leu Glu Val Arg Glu Arg Gln Leu Arg Asn Phe Phe Leu						
		485		490		495
Thr Leu Met Val Ser Gln Gly Ile Pro Met Ile Gln Ser Gly Asp Glu						
		500		505		510
Tyr Ala His Thr Ala Glu Gly Asn Asn Asn Arg Trp Ala Leu Asp Ser						
		515		520		525
Asn Ala Asn Tyr Phe Leu Trp Asp Gln Leu Thr Ala Lys Pro Thr Leu						
		530		535		540
Met His Phe Leu Cys Asp Leu Ile Ala Phe Arg Lys Lys Tyr Lys Thr						
		545		550		560
Leu Phe Asn Arg Gly Phe Leu Ser Asn Lys Glu Ile Ser Trp Val Asp						
		565		570		575
Ala Met Gly Asn Pro Met Thr Trp Arg Pro Gly Asn Phe Leu Ala Phe						
		580		585		590
Lys Ile Lys Ser Pro Lys Ala His Val Tyr Val Ala Phe His Val Gly						
		595		600		605
Ala Gln Asp Gln Leu Ala Thr Leu Pro Lys Ala Ser Ser Asn Phe Leu						
		610		615		620
Pro Tyr Gln Ile Val Ala Glu Ser Gln Gln Gly Phe Val Pro Gln Asn						
		625		630		640

Val Ala Thr Pro Thr Val Ser Leu Gln Pro His Thr Thr Leu Ile Ala  
645 650 655

Ile Ser His Ala Lys Glu Val Thr  
660

<210> 402

<211> 328

<212> PRT

<213> Chlamydia pneumoniae

<400> 402

Met Ala Phe Lys Glu Val Val Arg Val Ala Val Thr Gly Gly Lys Gly  
5 10 15

Gln Ile Ala Tyr Asn Phe Leu Phe Ala Leu Ala His Gly Asp Val Phe  
20 25 30

Gly Val Asp Arg Gly Val Asp Leu Arg Ile Tyr Asp Val Pro Gly Thr  
35 40 45

Glu Arg Ala Leu Ser Gly Val Arg Met Glu Leu Asp Asp Gly Ala Tyr  
50 55 60

Pro Leu Leu His Arg Leu Arg Val Thr Thr Ser Leu Asn Asp Ala Phe  
65 70 75 80

Asp Gly Ile Asp Ala Ala Phe Leu Ile Gly Ala Val Pro Arg Gly Pro  
85 90 95

Gly Met Glu Arg Gly Asp Leu Leu Lys Gln Asn Gly Gln Ile Phe Ser  
100 105 110

Leu Gln Gly Ala Ala Leu Asn Thr Ala Ala Lys Arg Asp Ala Lys Ile  
115 120 125

Phe Val Val Gly Asn Pro Val Asn Thr Asn Cys Trp Ile Ala Met Lys  
130 135 140

His Ala Pro Arg Leu His Arg Lys Asn Phe His Ala Met Leu Arg Leu  
145 150 155 160

Asp Gln Asn Arg Met His Ser Met Leu Ala His Arg Ala Glu Val Pro  
165 170 175

Leu Glu Glu Val Ser Arg Val Val Ile Trp Gly Asn His Ser Ala Lys  
180 185 190

Gln Val Pro Asp Phe Thr Gln Ala Arg Ile Ser Gly Lys Pro Ala Ala  
195 200 205

Glu Val Ile Gly Asp Arg Asp Trp Leu Glu Asn Ile Leu Val His Ser  
210 215 220

Val Gln Asn Arg Gly Ser Ala Val Ile Glu Ala Arg Gly Lys Ser Ser  
225 230 235 240

Ala Ala Ser Ala Ser Arg Ala Leu Ala Glu Ala Ala Arg Ser Ile Phe  
245 250 255

Cys Pro Lys Ser Asp Glu Trp Phe Ser Ser Gly Val Cys Ser Asp His  
                   260                  265                  270  
 Asn Pro Tyr Gly Ile Pro Glu Asp Leu Ile Phe Gly Phe Pro Cys Arg  
                   275                  280                  285  
 Met Leu Pro Ser Gly Asp Tyr Glu Ile Ile Pro Gly Leu Pro Trp Glu  
           290                  295                  300  
 Pro Phe Ile Arg Asn Lys Ile Gln Ile Ser Leu Asp Glu Ile Ala Gln  
 305                  310                  315                  320  
 Glu Lys Ala Ser Val Ser Ser Leu  
                   325

&lt;210&gt; 403

&lt;211&gt; 217

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 403

Met Lys Arg Val Ile Tyr Lys Thr Ile Phe Cys Gly Leu Thr Leu Leu  
                   5                  10                  15  
 Thr Ser Leu Ser Ser Cys Ser Leu Asp Pro Lys Gly Tyr Asn Leu Glu  
                   20                  25                  30  
 Thr Lys Asn Ser Arg Asp Leu Asn Gln Glu Ser Val Ile Leu Lys Glu  
                   35                  40                  45  
 Asn Arg Glu Thr Pro Ser Leu Val Lys Arg Leu Ser Arg Arg Ser Arg  
           50                  55                  60  
 Arg Leu Phe Ala Arg Arg Asp Gln Thr Gln Lys Asp Thr Leu Gln Val  
           65                  70                  75                  80  
 Gln Ala Asn Phe Lys Thr Tyr Ala Glu Lys Ile Ser Glu Gln Asp Glu  
                   85                  90                  95  
 Arg Asp Leu Ser Phe Val Val Ser Ser Ala Ala Glu Lys Ser Ser Ile  
           100                  105                  110  
 Ser Leu Ala Leu Ser Gln Gly Glu Ile Lys Asp Ala Leu Tyr Arg Ile  
           115                  120                  125  
 Arg Glu Val His Pro Leu Ala Leu Ile Glu Ala Leu Ala Glu Asn Pro  
           130                  135                  140  
 Ala Leu Ile Glu Gly Met Lys Lys Met Gln Gly Arg Asp Trp Ile Trp  
           145                  150                  155                  160  
 Asn Leu Phe Leu Thr Gln Leu Ser Glu Val Phe Ser Gln Ala Trp Ser  
                   165                  170                  175  
 Gln Gly Val Ile Ser Glu Glu Asp Ile Ala Ala Phe Ala Ser Thr Leu  
           180                  185                  190  
 Gly Leu Asp Ser Gly Thr Val Ala Ser Ile Val Gln Gly Glu Arg Trp  
           195                  200                  205

Pro Glu Leu Val Asp Ile Val Ile Thr  
 210 215

<210> 404

<211> 270

<212> PRT

<213> Chlamydia pneumoniae

<400> 404

Met Ile Ile Ile Lys Asn Asn Glu Leu Met Ile Arg Arg Phe Phe Lys  
 5 10 15

Thr Leu Phe Pro Pro Gly Pro Gln Tyr Ser Leu Cys Tyr Ala Ser Ile  
 20 25 30

Leu Ile Val Leu Ser Ser Leu Val Cys Val Pro Thr Phe Cys Trp Leu  
 35 40 45

Phe Leu Pro Glu Leu Ser Leu Ser Lys Phe Asn Pro Ser Pro Ile Arg  
 50 55 60

Asn Leu Phe Leu Val Ser Ser Thr Leu Ser Lys Val Pro Pro Thr Ala  
 65 70 75 80

Ile Ala Glu His Leu Arg Leu Ser Ala Asp Ala Pro Thr Tyr Leu His  
 85 90 95

Glu Phe Ser Ile Lys Glu Ala Glu Ser Ser Leu His Ala Leu Gly Ile  
 100 105 110

Phe Ser Ser Leu Val Ile Glu Lys Ser Pro Asp Asn Lys Gly Ile Thr  
 115 120 125

Ile Phe Tyr Thr Leu Gln Thr Pro Ile Ala Tyr Val Gly Asn Arg Ser  
 130 135 140

Asn Thr Leu Cys Asn Leu Glu Gly Ser Cys Phe Leu Gly Gln Pro Tyr  
 145 150 155 160

Phe Pro Ser Leu Asn Leu Pro Gln Ile Phe Phe Ser Gln Glu Asp Leu  
 165 170 175

Lys Met Gln Lys Leu Pro Lys Glu Lys Met Leu Phe Thr Lys Ile Leu  
 180 185 190

Leu Lys Glu Leu Ala Met Glu Ser Pro Lys Ile Ile Asp Leu Ser Leu  
 195 200 205

Ser Asp Ala Tyr Pro Gly Glu Ile Ile Val Thr Leu Ser Ser Gly Ser  
 210 215 220

Leu Leu Arg Leu Pro Ile Lys Thr Leu Asp Arg Ala Leu Asp Leu Tyr  
 225 230 235 240

Lys His Met Lys Lys Ser Pro Val Ile Glu Ser Glu Lys Gln Tyr Val  
 245 250 255

Tyr Asp Leu Arg Phe Pro Asn Phe Leu Leu Leu Lys Ala Leu  
 260 265 270

&lt;210&gt; 405

&lt;211&gt; 651

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 405

Met Val Asn Pro Ile Gly Pro Gly Pro Ile Asp Glu Thr Glu Arg Thr  
                                   5                                  10                                  15

Pro Pro Ala Asp Leu Ser Ala Gln Gly Leu Glu Ala Ser Ala Ala Asn  
                                   20                                  25                                  30

Lys Ser Ala Glu Ala Gln Arg Ile Ala Gly Ala Glu Ala Lys Pro Lys  
                                   35                                  40                                  45

Glu Ser Lys Thr Asp Ser Val Glu Arg Trp Ser Ile Leu Arg Ser Ala  
                                   50                                  55                                  60

Val Asn Ala Leu Met Ser Leu Ala Asp Lys Leu Gly Ile Ala Ser Ser  
                                   65                                  70                                  75                                  80

Asn Ser Ser Ser Ser Thr Ser Arg Ser Ala Asp Val Asp Ser Thr Thr  
                                   85                                  90                                  95

Ala Thr Ala Pro Thr Pro Pro Pro Pro Thr Phe Asp Asp Tyr Lys Thr  
                                   100                                  105                                  110

Gln Ala Gln Thr Ala Tyr Asp Thr Ile Phe Thr Ser Thr Ser Leu Ala  
                                   115                                  120                                  125

Asp Ile Gln Ala Ala Leu Val Ser Leu Gln Asp Ala Val Thr Asn Ile  
                                   130                                  135                                  140

Lys Asp Thr Ala Ala Thr Asp Glu Glu Thr Ala Ile Ala Ala Glu Trp  
                                   145                                  150                                  155                                  160

Glu Thr Lys Asn Ala Asp Ala Val Lys Val Gly Ala Gln Ile Thr Glu  
                                   165                                  170                                  175

Leu Ala Lys Tyr Ala Ser Asp Asn Gln Ala Ile Leu Asp Ser Leu Gly  
                                   180                                  185                                  190

Lys Leu Thr Ser Phe Asp Leu Leu Gln Ala Ala Leu Leu Gln Ser Val  
                                   195                                  200                                  205

Ala Asn Asn Asn Lys Ala Ala Glu Leu Leu Lys Glu Met Gln Asp Asn  
                                   210                                  215                                  220

Pro Val Val Pro Gly Lys Thr Pro Ala Ile Ala Gln Ser Leu Val Asp  
                                   225                                  230                                  235                                  240

Gln Thr Asp Ala Thr Ala Thr Gln Ile Glu Lys Asp Gly Asn Ala Ile  
                                   245                                  250                                  255

Arg Asp Ala Tyr Phe Ala Gly Gln Asn Ala Ser Gly Ala Val Glu Asn  
                                   260                                  265                                  270

Ala Lys Ser Asn Asn Ser Ile Ser Asn Ile Asp Ser Ala Lys Ala Ala  
                                   275                                  280                                  285

Ile	Ala	Thr	Ala	Lys	Thr	Gln	Ile	Ala	Glu	Ala	Gln	Lys	Lys	Phe	Pro
290						295					300				
Asp	Ser	Pro	Ile	Leu	Gln	Glu	Ala	Glu	Gln	Met	Val	Ile	Gln	Ala	Glu
305					310					315					320
Lys	Asp	Leu	Lys	Asn	Ile	Lys	Pro	Ala	Asp	Gly	Ser	Asp	Val	Pro	Asn
				325					330					335	
Pro	Gly	Thr	Thr	Val	Gly	Gly	Ser	Lys	Gln	Gln	Gly	Ser	Ser	Ile	Gly
			340					345					350		
Ser	Ile	Arg	Val	Ser	Met	Leu	Leu	Asp	Asp	Ala	Glu	Asn	Glu	Thr	Ala
		355					360					365			
Ser	Ile	Leu	Met	Ser	Gly	Phe	Arg	Gln	Met	Ile	His	Met	Phe	Asn	Thr
	370					375					380				
Glu	Asn	Pro	Asp	Ser	Gln	Ala	Ala	Gln	Gln	Glu	Leu	Ala	Ala	Gln	Ala
385					390					395					400
Arg	Ala	Ala	Lys	Ala	Ala	Gly	Asp	Asp	Ser	Ala	Ala	Ala	Ala	Leu	Ala
				405					410					415	
Asp	Ala	Gln	Lys	Ala	Leu	Glu	Ala	Ala	Leu	Gly	Lys	Ala	Gly	Gln	Gln
			420					425					430		
Gln	Gly	Ile	Leu	Asn	Ala	Leu	Gly	Gln	Ile	Ala	Ser	Ala	Ala	Val	Val
		435					440					445			
Ser	Ala	Gly	Val	Pro	Pro	Ala	Ala	Ala	Ser	Ser	Ile	Gly	Ser	Ser	Val
	450					455					460				
Lys	Gln	Leu	Tyr	Lys	Thr	Ser	Lys	Ser	Thr	Gly	Ser	Asp	Tyr	Lys	Thr
465					470					475					480
Gln	Ile	Ser	Ala	Gly	Tyr	Asp	Ala	Tyr	Lys	Ser	Ile	Asn	Asp	Ala	Tyr
				485				490						495	
Gly	Arg	Ala	Arg	Asn	Asp	Ala	Thr	Arg	Asp	Val	Ile	Asn	Asn	Val	Ser
			500					505					510		
Thr	Pro	Ala	Leu	Thr	Arg	Ser	Val	Pro	Arg	Ala	Arg	Thr	Glu	Ala	Arg
		515					520					525			
Gly	Pro	Glu	Lys	Thr	Asp	Gln	Ala	Leu	Ala	Arg	Val	Ile	Ser	Gly	Asn
	530					535					540				
Ser	Arg	Thr	Leu	Gly	Asp	Val	Tyr	Ser	Gln	Val	Ser	Ala	Leu	Gln	Ser
545					550					555					560
Val	Met	Gln	Ile	Ile	Gln	Ser	Asn	Pro	Gln	Ala	Asn	Asn	Glu	Glu	Ile
				565					570					575	
Arg	Gln	Lys	Leu	Thr	Ser	Ala	Val	Thr	Lys	Pro	Pro	Gln	Phe	Gly	Tyr
			580					585					590		
Pro	Tyr	Val	Gln	Leu	Ser	Asn	Asp	Ser	Thr	Gln	Lys	Phe	Ile	Ala	Lys
		595					600					605			

Leu Glu Ser Leu Phe Ala Glu Gly Ser Arg Thr Ala Ala Glu Ile Lys  
 610 615 620

Ala Leu Ser Phe Glu Thr Asn Ser Leu Phe Ile Gln Gln Val Leu Val  
 625 630 635 640

Asn Ile Gly Ser Leu Tyr Ser Gly Tyr Leu Gln  
 645 650

<210> 406

<211> 1074

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 406

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gtgcgtaaaa ctgtcattgt tgctatgtct ggaggagtgg attcctcggt tgttgcttat 60
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caggacgaga atggtgagtg tactgcaacc aaagattttc gcgatgtaga gcggatcgca 180
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<210> 407

<211> 1827

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 407

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&lt;210&gt; 408

&lt;211&gt; 804

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis serovar D

&lt;400&gt; 408

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&lt;210&gt; 409

&lt;211&gt; 663

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis serovar D

&lt;400&gt; 409

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ata 663

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&lt;210&gt; 410

&lt;211&gt; 1470

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis serovar D

&lt;400&gt; 410

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&lt;210&gt; 411

&lt;211&gt; 234

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis serovar D

&lt;400&gt; 411

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&lt;210&gt; 412

&lt;211&gt; 1941

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis serovar D

&lt;400&gt; 412

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&lt;210&gt; 413

&lt;211&gt; 693

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis serovar D

&lt;400&gt; 413

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&lt;210&gt; 414

&lt;211&gt; 1599

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis serovar D

&lt;400&gt; 414

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&lt;210&gt; 415

&lt;211&gt; 1395

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis serovar D

&lt;400&gt; 415

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ccccctgcta	aaaaa					1395

&lt;210&gt; 416

&lt;211&gt; 366

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis serovar D

&lt;400&gt; 416

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cagagaacaa	aaacaaattc	tcgcacgcgt	aagggtaaac	gtaaaactgt	tcgaggtaag	360
aagaaa						366

&lt;210&gt; 417

&lt;211&gt; 1659

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis serovar D

&lt;400&gt; 417

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&lt;213&gt; Chlamydia trachomatis serovar D

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&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis serovar D

&lt;400&gt; 421

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&lt;210&gt; 422

&lt;211&gt; 1980

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis serovar D

&lt;400&gt; 422

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&lt;210&gt; 423

&lt;211&gt; 978

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis serovar D

&lt;400&gt; 423

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&lt;210&gt; 424

&lt;211&gt; 696

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis serovar D

&lt;400&gt; 424

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&lt;210&gt; 425

&lt;211&gt; 3756

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis serovar D

&lt;400&gt; 425

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&lt;210&gt; 426

&lt;211&gt; 894

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis serovar D

&lt;400&gt; 426

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<210> 427

<211> 894

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 427

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<210> 428

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<212> DNA

<213> Chlamydia trachomatis serovar D

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<210> 429

<211> 1707

<212> DNA

<213> Chlamydia trachomatis serovar D

<400> 429

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&lt;210&gt; 430

&lt;211&gt; 1998

&lt;212&gt; DNA

&lt;213&gt; Chlamydia trachomatis serovar D

&lt;400&gt; 430

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&lt;210&gt; 431

&lt;211&gt; 609

&lt;212&gt; PRT

&lt;213&gt; Chlamydia trachomatis serovar D

&lt;400&gt; 431



				325					330					335	
Asp	Met	Glu	Asp	Phe	Asp	Pro	Ser	Gly	Pro	Pro	Pro	Trp	Glu	Glu	Phe
			340					345					350		
Ala	Lys	Ile	Ile	Gln	Val	Phe	Ser	Ser	Asn	Thr	Glu	Ala	Leu	Ile	Ile
		355					360					365			
Asp	Gln	Thr	Asn	Asn	Pro	Gly	Gly	Ser	Val	Leu	Tyr	Leu	Tyr	Ala	Leu
	370					375					380				
Leu	Ser	Met	Leu	Thr	Asp	Arg	Pro	Leu	Glu	Leu	Pro	Lys	His	Arg	Met
385					390					395					400
Ile	Leu	Thr	Gln	Asp	Glu	Val	Val	Asp	Ala	Leu	Asp	Trp	Leu	Thr	Leu
			405						410					415	
Leu	Glu	Asn	Val	Asp	Thr	Asn	Val	Glu	Ser	Arg	Leu	Ala	Leu	Gly	Asp
			420					425					430		
Asn	Met	Glu	Gly	Tyr	Thr	Val	Asp	Leu	Gln	Val	Ala	Glu	Tyr	Leu	Lys
		435					440					445			
Ser	Phe	Gly	Arg	Gln	Val	Leu	Asn	Cys	Trp	Ser	Lys	Gly	Asp	Ile	Glu
	450					455					460				
Leu	Ser	Thr	Pro	Ile	Pro	Leu	Phe	Gly	Phe	Glu	Lys	Ile	His	Pro	His
465					470					475					480
Pro	Arg	Val	Gln	Tyr	Ser	Lys	Pro	Ile	Cys	Val	Leu	Ile	Asn	Glu	Gln
			485						490					495	
Asp	Phe	Ser	Cys	Ala	Asp	Phe	Phe	Pro	Val	Val	Leu	Lys	Asp	Asn	Asp
			500					505					510		
Arg	Ala	Leu	Ile	Val	Gly	Thr	Arg	Thr	Ala	Gly	Ala	Gly	Gly	Phe	Val
		515					520					525			
Phe	Asn	Val	Gln	Phe	Pro	Asn	Arg	Thr	Gly	Ile	Lys	Thr	Cys	Ser	Leu
	530					535					540				
Thr	Gly	Ser	Leu	Ala	Val	Arg	Glu	His	Gly	Ala	Phe	Ile	Glu	Asn	Ile
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Gly	Val	Glu	Pro	His	Ile	Asp	Leu	Pro	Phe	Thr	Ala	Asn	Asp	Ile	Arg
				565					570					575	
Tyr	Lys	Gly	Tyr	Ser	Glu	Tyr	Leu	Asp	Lys	Val	Lys	Lys	Leu	Val	Cys
			580					585					590		
Gln	Leu	Ile	Asn	Asn	Asp	Gly	Thr	Ile	Ile	Leu	Ala	Glu	Asp	Gly	Ser
		595					600					605			
Phe															

&lt;210&gt; 432

&lt;211&gt; 268

&lt;212&gt; PRT

&lt;213&gt; Chlamydia trachomatis serovar D



231

				5						10					15				
Ser	Gly	Leu	Ser	Gly	Leu	Ser	Ser	Cys	Cys	Ala	Asn	Ser	Tyr	Gly	Ser				
			20					25					30						
Thr	Leu	Ala	Lys	Asn	Thr	Ala	Glu	Ile	Lys	Glu	Glu	Ser	Val	Thr	Leu				
		35					40					45							
Arg	Glu	Lys	Pro	Asp	Ala	Gly	Cys	Lys	Lys	Lys	Ser	Ser	Cys	Tyr	Leu				
	50					55					60								
Arg	Lys	Phe	Phe	Ser	Arg	Lys	Lys	Pro	Lys	Glu	Lys	Thr	Glu	Pro	Val				
65					70					75					80				
Leu	Pro	Asn	Phe	Lys	Ser	Tyr	Ala	Asp	Pro	Met	Thr	Asp	Ser	Glu	Arg				
				85					90					95					
Lys	Asp	Leu	Ser	Phe	Val	Val	Ser	Ala	Ala	Ala	Asp	Lys	Ser	Ser	Ile				
			100					105					110						
Ala	Leu	Ala	Met	Ala	Gln	Gly	Glu	Ile	Lys	Gly	Ala	Leu	Ser	Arg	Ile				
		115					120					125							
Arg	Glu	Ile	His	Pro	Leu	Ala	Leu	Leu	Gln	Ala	Leu	Ala	Glu	Asp	Pro				
	130					135					140								
Ala	Leu	Ile	Ala	Gly	Met	Lys	Lys	Met	Gln	Gly	Arg	Asp	Trp	Val	Trp				
145					150					155					160				
Asn	Ile	Phe	Ile	Thr	Glu	Leu	Ser	Lys	Val	Phe	Ser	Gln	Ala	Ala	Ser				
				165					170						175				
Leu	Gly	Ala	Phe	Ser	Val	Ala	Asp	Val	Ala	Ala	Phe	Ala	Ser	Thr	Leu				
			180					185					190						
Gly	Leu	Asp	Ser	Gly	Thr	Val	Thr	Ser	Ile	Val	Asp	Gly	Glu	Arg	Trp				
	195						200					205							
Ala	Glu	Leu	Ile	Asp	Val	Val	Ile	Gln	Asn	Pro	Ala	Ile							
	210					215					220								

&lt;210&gt; 434

&lt;211&gt; 490

&lt;212&gt; PRT

&lt;213&gt; Chlamydia trachomatis serovar D

&lt;400&gt; 434

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Ser	Tyr	Val	Ile	Leu	Glu	Arg	Ala	Ile	Pro	His	Val	Leu	Asp	Gly	Leu				
		20						25					30						
Lys	Pro	Val	Gln	Arg	Arg	Leu	Leu	Trp	Thr	Leu	Phe	Arg	Met	Asp	Asp				
		35					40					45							
Gly	Lys	Met	His	Lys	Val	Ala	Asn	Ile	Ala	Gly	Arg	Thr	Met	Ala	Leu				
	50					55					60								
His	Pro	His	Gly	Asp	Ala	Pro	Ile	Val	Glu	Ala	Leu	Val	Val	Leu	Ala				



65					70						75				80
Asn	Lys	Gly	Phe	Leu	Ile	Glu	Thr	Gln	Gly	Asn	Phe	Gly	Asn	Pro	Leu
				85					90					95	
Thr	Gly	Asp	Pro	His	Ala	Ala	Ala	Arg	Tyr	Ile	Glu	Ala	Arg	Leu	Ser
			100					105					110		
Pro	Leu	Ala	Lys	Glu	Val	Leu	Phe	Asn	Thr	Asp	Leu	Met	Thr	Phe	His
		115					120					125			
Asp	Ser	Tyr	Asp	Gly	Arg	Glu	Gln	Glu	Pro	Asp	Ile	Leu	Ala	Ala	Lys
	130					135					140				
Ile	Pro	Leu	Leu	Leu	Leu	His	Gly	Val	Asp	Gly	Ile	Ala	Val	Gly	Met
145					150					155					160
Thr	Thr	Lys	Ile	Phe	Pro	His	Asn	Phe	Cys	Asp	Leu	Leu	Glu	Ala	Gln
			165						170					175	
Ile	Ala	Ile	Leu	Asn	Asp	Gln	Pro	Phe	Ser	Leu	Leu	Pro	Asp	Phe	Pro
			180					185					190		
Pro	Gly	Gly	Thr	Met	Asp	Ala	Ser	Asp	Tyr	Gln	Asp	Gly	Leu	Gly	Ser
		195					200					205			
Ile	Val	Leu	Arg	Ala	Thr	Ile	Asp	Ile	Ile	Asn	Asp	Lys	Thr	Leu	Leu
	210					215					220				
Ile	Lys	Glu	Ile	Cys	Pro	Ser	Thr	Thr	Thr	Glu	Thr	Leu	Ile	Arg	Ser
225					230					235					240
Ile	Glu	Asn	Ala	Ala	Lys	Arg	Gly	Ile	Ile	Lys	Ile	Asp	Ser	Ile	Gln
			245					250						255	
Asp	Phe	Ser	Thr	Asp	Leu	Pro	His	Ile	Glu	Ile	Lys	Leu	Pro	Lys	Gly
			260					265					270		
Ile	Tyr	Ala	Lys	Asp	Leu	Leu	Arg	Pro	Leu	Tyr	Thr	His	Thr	Glu	Cys
		275					280					285			
Gln	Val	Ile	Leu	Thr	Ser	Arg	Pro	Thr	Ala	Ile	Tyr	Gln	Gly	Lys	Pro
	290					295					300				
Trp	Glu	Thr	Thr	Ile	Ser	Glu	Ile	Leu	Arg	Leu	Gln	Thr	Lys	Thr	Leu
305					310					315					320
Gln	Asn	Tyr	Leu	Lys	Lys	Glu	Leu	Leu	Ile	Leu	Glu	Asp	Ser	Leu	Ser
				325					330					335	
Arg	Glu	Leu	Tyr	His	Lys	Thr	Leu	Glu	Tyr	Leu	Phe	Ile	Lys	His	Lys
			340					345					350		
Leu	Tyr	Asp	Thr	Val	Arg	Ser	Met	Leu	Ser	Lys	Arg	Lys	Thr	Ser	Pro
		355					360					365			
Ser	Ser	Ser	Thr	Ile	His	Asn	Ala	Val	Leu	Glu	Ala	Leu	Thr	Pro	Phe
						375					380				
Leu	Asp	Thr	Leu	Pro	Ala	Pro	Asp	Lys	Gln	Ala	Thr	Ala	Gln	Leu	Ala
385					390					395					400

Ala Leu Thr Ile Lys Lys Ile Leu Cys Phe Asp Glu Asn Ser Tyr Glu  
 405 410 415

Lys Glu Leu Ala Cys Leu Glu Lys Lys Arg Ser Ser Val Gln Lys Asp  
 420 425 430

Leu Ser Gln Leu Lys Lys Tyr Thr Val Leu Tyr Ile Lys Lys Leu Leu  
 435 440 445

Glu Thr Tyr Arg Gln Leu Gly His Arg Lys Thr Lys Ile Ala Lys Phe  
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Asp Asp Leu Pro Thr Glu Arg Val Ser Ala His Lys Lys Ala Lys Glu  
 465 470 475 480

Leu Ala Ala Leu Asp Gln Glu Glu Asn Phe  
 485 490

<210> 435  
 <211> 78  
 <212> PRT  
 <213> Chlamydia trachomatis serovar D

<400> 435  
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Glu Glu Val His Leu Lys Glu Val Gln Gly Thr Asn Thr Ile Ile Tyr  
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Glu Leu Thr Val Ala Lys Gly Asp Ile Gly Lys Ile Ile Gly Lys Glu  
 35 40 45

Gly Arg Thr Ile Lys Ala Ile Arg Thr Leu Leu Val Ser Val Ala Ser  
 50 55 60

Arg Asp Asn Val Lys Val Ser Leu Glu Ile Met Glu Glu Arg  
 65 70 75

<210> 436  
 <211> 647  
 <212> PRT  
 <213> Chlamydia trachomatis serovar D

<400> 436  
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Pro Ile Ile Asn Gly Gln Ile Ala Ser Asn Ser Glu Thr Lys Glu Ser  
 20 25 30

Thr Lys Glu Ser Glu Ala Ser Pro Ser Ala Ser Ser Ser Val Ser Ser  
 35 40 45

Trp Ser Phe Leu Ser Ser Ala Lys His Ala Leu Ile Ser Leu Arg Asp  
 50 55 60

Ala Ile Leu Asn Lys Asn Ser Ser Pro Thr Asp Ser Leu Ser Gln Leu

65					70						75				80
Glu	Ala	Ser	Thr	Ser	Thr	Ser	Thr	Val	Thr	Arg	Val	Ala	Ala	Arg	Asp
				85					90					95	
Tyr	Asn	Glu	Ala	Lys	Ser	Asn	Phe	Asp	Thr	Ala	Lys	Ser	Gly	Leu	Glu
			100					105					110		
Asn	Ala	Thr	Thr	Leu	Ala	Glu	Tyr	Glu	Thr	Lys	Met	Ala	Asp	Leu	Met
		115					120					125			
Ala	Ala	Leu	Gln	Asp	Met	Glu	Arg	Leu	Ala	Lys	Gln	Lys	Ala	Glu	Val
	130					135					140				
Thr	Arg	Ile	Lys	Glu	Ala	Leu	Gln	Glu	Lys	Gln	Glu	Val	Ile	Asp	Lys
145					150					155					160
Leu	Asn	Gln	Leu	Val	Lys	Leu	Glu	Lys	Gln	Asn	Gln	Thr	Leu	Lys	Glu
			165						170					175	
Thr	Leu	Thr	Thr	Thr	Asp	Ser	Ala	Asp	Gln	Ile	Pro	Ala	Ile	Asn	Ser
			180					185						190	
Gln	Leu	Glu	Ile	Asn	Lys	Asn	Ser	Ala	Asp	Gln	Ile	Ile	Lys	Asp	Leu
	195						200					205			
Glu	Gly	Gln	Asn	Ile	Ser	Tyr	Glu	Ala	Val	Leu	Thr	Asn	Ala	Gly	Glu
	210					215					220				
Val	Ile	Lys	Ala	Ser	Ser	Glu	Ala	Gly	Ile	Lys	Leu	Gly	Gln	Ala	Leu
225					230					235					240
Gln	Ser	Ile	Val	Asp	Ala	Gly	Asp	Gln	Ser	Gln	Ala	Ala	Val	Leu	Gln
				245					250					255	
Ala	Gln	Gln	Asn	Asn	Ser	Pro	Asp	Asn	Ile	Ala	Ala	Thr	Lys	Lys	Leu
			260					265					270		
Ile	Asp	Ala	Ala	Glu	Thr	Lys	Val	Asn	Glu	Leu	Lys	Gln	Glu	His	Thr
	275						280					285			
Gly	Leu	Thr	Asp	Ser	Pro	Leu	Val	Lys	Lys	Ala	Glu	Glu	Gln	Ile	Ser
	290					295					300				
Gln	Ala	Gln	Lys	Asp	Ile	Gln	Glu	Ile	Lys	Pro	Ser	Gly	Ser	Asp	Ile
305					310					315					320
Pro	Ile	Val	Gly	Pro	Ser	Gly	Ser	Ala	Ala	Ser	Ala	Gly	Ser	Ala	Val
				325					330					335	
Gly	Ala	Leu	Lys	Ser	Ser	Asn	Asn	Ser	Gly	Arg	Ile	Ser	Leu	Leu	Leu
			340					345					350		
Asp	Asp	Val	Asp	Asn	Glu	Met	Ala	Ala	Ile	Ala	Met	Gln	Gly	Phe	Arg
		355					360					365			
Ser	Met	Ile	Glu	Gln	Phe	Asn	Val	Asn	Asn	Pro	Ala	Thr	Ala	Lys	Glu
	370					375					380				
Leu	Gln	Ala	Met	Glu	Ala	Gln	Leu	Thr	Ala	Met	Ser	Asp	Gln	Leu	Val
385					390					395					400

Gly Ala Asp Gly Glu Leu Pro Ala Glu Ile Gln Ala Ile Lys Asp Ala  
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 Leu Ala Gln Ala Leu Lys Gln Pro Ser Thr Asp Gly Leu Ala Thr Ala  
 420 425 430  
 Met Gly Gln Val Ala Phe Ala Ala Lys Val Gly Gly Gly Ser Ala  
 435 440 445  
 Gly Thr Ala Gly Thr Val Gln Met Asn Val Lys Gln Leu Tyr Lys Thr  
 450 455 460  
 Ala Phe Ser Ser Thr Ser Ser Ser Ser Tyr Ala Ala Ala Leu Ser Asp  
 465 470 475 480  
 Gly Tyr Ser Ala Tyr Lys Thr Leu Asn Ser Leu Tyr Ser Glu Ser Arg  
 485 490 495  
 Ser Gly Val Gln Ser Ala Ile Ser Gln Thr Ala Asn Pro Ala Leu Ser  
 500 505 510  
 Arg Ser Val Ser Arg Ser Gly Ile Glu Ser Gln Gly Arg Ser Ala Asp  
 515 520 525  
 Ala Ser Gln Arg Ala Ala Glu Thr Ile Val Arg Asp Ser Gln Thr Leu  
 530 535 540  
 Gly Asp Val Tyr Ser Arg Leu Gln Val Leu Asp Ser Leu Met Ser Thr  
 545 550 555 560  
 Ile Val Ser Asn Pro Gln Val Asn Gln Glu Glu Ile Met Gln Lys Leu  
 565 570 575  
 Thr Ala Ser Ile Ser Lys Ala Pro Gln Phe Gly Tyr Pro Ala Val Gln  
 580 585 590  
 Asn Ser Ala Asp Ser Leu Gln Lys Phe Ala Ala Gln Leu Glu Arg Glu  
 595 600 605  
 Phe Val Asp Gly Glu Arg Ser Leu Ala Glu Ser Arg Glu Asn Ala Phe  
 610 615 620  
 Arg Lys Gln Pro Ala Phe Ile Gln Gln Val Leu Val Asn Ile Ala Ser  
 625 630 635 640  
 Leu Phe Ser Gly Tyr Leu Ser  
 645

&lt;210&gt; 437

&lt;211&gt; 231

&lt;212&gt; PRT

&lt;213&gt; Chlamydia trachomatis serovar D

&lt;400&gt; 437

Met Met Glu Val Phe Met Asn Phe Leu Asp Gln Leu Asp Leu Ile Ile  
 5 10 15

Gln Asn Lys His Met Leu Glu His Thr Phe Tyr Val Lys Trp Ser Lys  
 20 25 30

Gly Glu Leu Thr Lys Glu Gln Leu Gln Ala Tyr Ala Lys Asp Tyr Tyr  
                   35                                  40                                  45  
 Leu His Ile Lys Ala Phe Pro Lys Tyr Leu Ser Ala Ile His Ser Arg  
           50                                  55                                  60  
 Cys Asp Asp Leu Glu Ala Arg Lys Leu Leu Leu Asp Asn Leu Met Asp  
   65                                  70                                  75                                  80  
 Glu Glu Asn Gly Tyr Pro Asn His Ile Asp Leu Trp Lys Gln Phe Val  
                   85                                  90                                  95  
 Phe Ala Leu Gly Val Thr Pro Glu Glu Leu Glu Ala His Glu Pro Ser  
                   100                                  105                                  110  
 Glu Ala Ala Lys Ala Lys Val Ala Thr Phe Met Arg Trp Cys Thr Gly  
           115                                  120                                  125  
 Asp Ser Leu Ala Ala Gly Val Ala Ala Leu Tyr Ser Tyr Glu Ser Gln  
   130                                  135                                  140  
 Ile Pro Arg Ile Ala Arg Glu Lys Ile Arg Gly Leu Thr Glu Tyr Phe  
  145                                  150                                  155                                  160  
 Gly Phe Ser Asn Pro Glu Asp Tyr Ala Tyr Phe Thr Glu His Glu Glu  
                   165                                  170                                  175  
 Ala Asp Val Arg His Ala Arg Glu Glu Lys Ala Leu Ile Glu Met Leu  
           180                                  185                                  190  
 Leu Lys Asp Asp Ala Asp Lys Val Leu Glu Ala Ser Gln Glu Val Thr  
   195                                  200                                  205  
 Gln Ser Leu Tyr Gly Phe Leu Asp Ser Phe Leu Asp Pro Gly Thr Cys  
  210                                  215                                  220  
 Cys Ser Cys His Gln Ser Tyr  
  225                                  230

&lt;210&gt; 438

&lt;211&gt; 533

&lt;212&gt; PRT

&lt;213&gt; Chlamydia trachomatis serovar D

&lt;400&gt; 438

Met Ser Asn Ser Phe Arg Asp Gln Glu Gln Gly Leu Gln Ala Val Phe  
                   5                                  10                                  15  
 Arg Ala Ala Arg Val Ile Ser His Met Phe Ser Gln Thr Ile Gly Pro  
           20                                  25                                  30  
 Tyr Gly Phe Ser Thr Ile Val His Asn Val Gln Asp Thr Arg Thr Thr  
           35                                  40                                  45  
 Gln Asp Ser Gln Ser Met Leu Lys Asp Ile Leu Phe Pro Asp Val Phe  
   50                                  55                                  60  
 Glu Asn Ile Gly Met Lys Leu Ile Arg Asp Thr Ala Leu Arg Thr Arg  
   65                                  70                                  75                                  80

Met Arg Phe Gly Asp Gly Ala Lys Thr Thr Ala Leu Leu Ile Glu Ala  
                                   85                                  90                                  95  
 Leu Leu Ala Glu Gly Met Thr Gly Ile Gln Lys Gly Leu Asp Pro His  
                                   100                                  105                                  110  
 Glu Ile His Arg Gly Met Leu Leu Ala Glu Lys Lys Ile Gln Glu Val  
                                   115                                  120                                  125  
 Phe Tyr Arg Glu Thr Phe Pro Leu Ser Asp Leu Glu His Thr Val Tyr  
                                   130                                  135                                  140  
 Val Ser Ser Ile Ala Arg Arg Cys Asn Ser Glu Ile Ala Ser Val Leu  
                                   145                                  150                                  155                                  160  
 Ser Ser Ala Val Gly Tyr Gly Gly Lys Asn Gly Tyr Tyr Ile Val Glu  
                                   165                                  170                                  175  
 Glu His Glu Glu His Glu Thr Tyr Trp His Ala Glu Glu His Ala Val  
                                   180                                  185                                  190  
 Trp Asp Phe Gly Tyr Ala Ser Pro Tyr Phe Ile Thr His Ala Glu Thr  
                                   195                                  200                                  205  
 Gly Thr Val Glu Tyr Ser Gln Val Tyr Ile Leu Val Ser Glu Gln Pro  
                                   210                                  215                                  220  
 Leu His Tyr Ser Asn Pro Ser Phe Leu Thr Phe Leu Gln Ser Val Val  
                                   225                                  230                                  235                                  240  
 Gln Ala Gly Lys Thr Pro Leu Val Ile Leu Ala Glu Ala Phe Asp Lys  
                                   245                                  250                                  255  
 Glu Leu Leu Ala Met Leu Glu Met Asn Gln Ile Glu Arg Val Phe Pro  
                                   260                                  265                                  270  
 Val Cys Ala Val Lys Val Ser Gly Lys His Ala Arg Glu Ser Leu Glu  
                                   275                                  280                                  285  
 Asp Ile Ala Val Leu Thr Gly Ala Thr Leu Leu Ser Glu Met Asp Phe  
                                   290                                  295                                  300  
 Glu Asp Ser Glu Glu Glu Arg Ile Thr Asn Arg Leu Gly Phe Val Ala  
                                   305                                  310                                  315                                  320  
 Gly Ile Cys Val Ser Ser Thr Ser Leu Cys Val Pro Arg Glu Thr Asp  
                                   325                                  330                                  335  
 Asn Lys Gln Arg Met Ala Glu His Cys Ala Phe Leu Gln Asp Lys Leu  
                                   340                                  345                                  350  
 Ser Phe Ser Gln Glu Glu Glu Ala Ser Ala Arg Leu Arg Arg Arg Leu  
                                   355                                  360                                  365  
 Ala Arg Leu Ser Ser Gly Glu Val Cys Ile His Ile Ala Ala Asp Cys  
                                   370                                  375                                  380  
 Ile Pro Gln Glu Glu Ile Gly Tyr Ile Thr Ser Ser Ile Arg Ala Met  
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[illegible]

<210> 439

<211> 465

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 439

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Tyr	Val	Ala	Ala	Ile	Thr	Ala	Ala	Gln	Ala	Gly	Leu	Lys	Thr	Ala	Leu
			20					25					30		
Ile	Glu	Lys	Arg	Glu	Ala	Gly	Gly	Thr	Cys	Leu	Asn	Arg	Gly	Cys	Ile
		35					40					45			
Pro	Ser	Lys	Ala	Leu	Leu	Ala	Gly	Ala	Glu	Val	Val	Thr	Gln	Ile	Arg
	50					55					60				
His	Ala	Asp	Gln	Phe	Gly	Ile	His	Val	Glu	Gly	Phe	Ser	Ile	Asn	Tyr
65					70					75					80
Pro	Ala	Met	Val	Gln	Arg	Lys	Asp	Ser	Val	Val	Arg	Ser	Ile	Arg	Asp
				85					90					95	
Gly	Leu	Asn	Gly	Leu	Ile	Arg	Ser	Asn	Lys	Ile	Thr	Val	Phe	Ser	Gly
			100					105					110		
Arg	Gly	Ser	Leu	Ile	Ser	Ser	Thr	Glu	Val	Lys	Ile	Leu	Gly	Glu	Asn
		115					120					125			
Pro	Ser	Val	Ile	Lys	Ala	His	Ser	Ile	Ile	Leu	Ala	Thr	Gly	Ser	Glu
	130					135					140				

Pro Arg Ala Phe Pro Gly Ile Pro Phe Ser Ala Glu Ser Pro Arg Ile  
 145 150 155 160  
 Leu Cys Ser Thr Gly Val Leu Asn Leu Lys Glu Ile Pro Gln Lys Met  
 165 170 175  
 Ala Ile Ile Gly Gly Gly Val Ile Gly Cys Glu Phe Ala Ser Leu Phe  
 180 185 190  
 His Thr Leu Gly Ser Glu Val Ser Val Ile Glu Ala Ser Ser Gln Ile  
 195 200 205  
 Leu Ala Leu Asn Asn Pro Asp Ile Ser Lys Thr Met Phe Asp Lys Phe  
 210 215 220  
 Thr Arg Gln Gly Leu Arg Phe Val Leu Glu Ala Ser Val Ser Asn Ile  
 225 230 235 240  
 Glu Asp Ile Gly Asp Arg Val Arg Leu Thr Ile Asn Gly Asn Val Glu  
 245 250 255  
 Glu Tyr Asp Tyr Val Leu Val Ser Ile Gly Arg Arg Leu Asn Thr Glu  
 260 265 270  
 Asn Ile Gly Leu Asp Lys Ala Gly Val Ile Cys Asp Glu Arg Gly Val  
 275 280 285  
 Ile Pro Thr Asp Ala Thr Met Arg Thr Asn Val Pro Asn Ile Tyr Ala  
 290 295 300  
 Ile Gly Asp Ile Thr Gly Lys Trp Gln Leu Ala His Val Ala Ser His  
 305 310 315 320  
 Gln Gly Ile Ile Ala Ala Arg Asn Ile Ala Gly His Lys Glu Glu Ile  
 325 330 335  
 Asp Tyr Ser Ala Val Pro Ser Val Ile Phe Thr Phe Pro Glu Val Ala  
 340 345 350  
 Ser Val Gly Leu Ser Pro Thr Ala Ala Gln Gln Gln Lys Ile Pro Val  
 355 360 365  
 Lys Val Thr Lys Phe Pro Phe Arg Ala Ile Gly Lys Ala Val Ala Met  
 370 375 380  
 Gly Glu Ala Asp Gly Phe Ala Ala Ile Ile Ser His Glu Thr Thr Gln  
 385 390 395 400  
 Gln Ile Leu Gly Ala Tyr Val Ile Gly Pro His Ala Ser Ser Leu Ile  
 405 410 415  
 Ser Glu Ile Thr Leu Ala Val Arg Asn Glu Leu Thr Leu Pro Cys Ile  
 420 425 430  
 Tyr Glu Thr Ile His Ala His Pro Thr Leu Ala Glu Val Trp Ala Glu  
 435 440 445  
 Ser Ala Leu Leu Ala Val Asp Thr Pro Leu His Met Pro Pro Ala Lys  
 450 455 460

Lys



465

&lt;210&gt; 440

&lt;211&gt; 122

&lt;212&gt; PRT

&lt;213&gt; Chlamydia trachomatis serovar D

&lt;400&gt; 440

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Met Pro Arg Ile Ile Gly Ile Asp Ile Pro Ala Lys Lys Lys Leu Lys
              5              10              15

Ile Ser Leu Thr Tyr Ile Tyr Gly Ile Gly Pro Ala Leu Ser Lys Glu
              20              25              30

Ile Ile Ala Arg Leu Gln Leu Asn Pro Glu Ala Arg Ala Ala Glu Leu
              35              40              45

Thr Glu Glu Glu Val Gly Arg Leu Asn Ala Leu Leu Gln Ser Asp Tyr
              50              55              60

Val Val Glu Gly Asp Leu Arg Arg Arg Val Gln Ser Asp Ile Lys Arg
              65              70              75              80

Leu Ile Thr Ile His Ala Tyr Arg Gly Gln Arg His Arg Leu Ser Leu
              85              90              95

Pro Val Arg Gly Gln Arg Thr Lys Thr Asn Ser Arg Thr Arg Lys Gly
              100              105              110

Lys Arg Lys Thr Val Ala Gly Lys Lys Lys
              115              120

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&lt;210&gt; 441

&lt;211&gt; 553

&lt;212&gt; PRT

&lt;213&gt; Chlamydia trachomatis serovar D

&lt;400&gt; 441

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Met Arg Ile Gly Asp Pro Met Asn Lys Leu Ile Arg Arg Ala Val Thr
              5              10              15

Ile Phe Ala Val Thr Ser Val Ala Ser Leu Phe Ala Ser Gly Val Leu
              20              25              30

Glu Thr Ser Met Ala Glu Ser Leu Ser Thr Asn Val Ile Ser Leu Ala
              35              40              45

Asp Thr Lys Ala Lys Asp Asn Thr Ser His Lys Ser Lys Lys Ala Arg
              50              55              60

Lys Asn His Ser Lys Glu Thr Pro Val Asp Arg Lys Glu Val Ala Pro
              65              70              75              80

Val His Glu Ser Lys Ala Thr Gly Pro Lys Gln Asp Ser Cys Phe Gly
              85              90              95

Arg Met Tyr Thr Val Lys Val Asn Asp Asp Arg Asn Val Glu Ile Thr
              100              105              110

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Gln Ala Val Pro Glu Tyr Ala Thr Val Gly Ser Pro Tyr Pro Ile Glu  
 115 120 125  
 Ile Thr Ala Thr Gly Lys Arg Asp Cys Val Asp Val Ile Ile Thr Gln  
 130 135 140  
 Gln Leu Pro Cys Glu Ala Glu Phe Val Arg Ser Asp Pro Ala Thr Thr  
 145 150 155 160  
 Pro Thr Ala Asp Gly Lys Leu Val Trp Lys Ile Asp Arg Leu Gly Gln  
 165 170 175  
 Gly Glu Lys Ser Lys Ile Thr Val Trp Val Lys Pro Leu Lys Glu Gly  
 180 185 190  
 Cys Cys Phe Thr Ala Ala Thr Val Cys Ala Cys Pro Glu Ile Arg Ser  
 195 200 205  
 Val Thr Lys Cys Gly Gln Pro Ala Ile Cys Val Lys Gln Glu Gly Pro  
 210 215 220  
 Glu Asn Ala Cys Leu Arg Cys Pro Val Val Tyr Lys Ile Asn Ile Val  
 225 230 235 240  
 Asn Gln Gly Thr Ala Thr Ala Arg Asn Val Val Val Glu Asn Pro Val  
 245 250 255  
 Pro Asp Gly Tyr Ala His Ser Ser Gly Gln Arg Val Leu Thr Phe Thr  
 260 265 270  
 Leu Gly Asp Met Gln Pro Gly Glu His Arg Thr Ile Thr Val Glu Phe  
 275 280 285  
 Cys Pro Leu Lys Arg Gly Arg Ala Thr Asn Ile Ala Thr Val Ser Tyr  
 290 295 300  
 Cys Gly Gly His Lys Asn Thr Ala Ser Val Thr Thr Val Ile Asn Glu  
 305 310 315 320  
 Pro Cys Val Gln Val Ser Ile Ala Gly Ala Asp Trp Ser Tyr Val Cys  
 325 330 335  
 Lys Pro Val Glu Tyr Val Ile Ser Val Ser Asn Pro Gly Asp Leu Val  
 340 345 350  
 Leu Arg Asp Val Val Val Glu Asp Thr Leu Ser Pro Gly Val Thr Val  
 355 360 365  
 Leu Glu Ala Ala Gly Ala Gln Ile Ser Cys Asn Lys Val Val Trp Thr  
 370 375 380  
 Val Lys Glu Leu Asn Pro Gly Glu Ser Leu Gln Tyr Lys Val Leu Val  
 385 390 395 400  
 Arg Ala Gln Thr Pro Gly Gln Phe Thr Asn Asn Val Val Val Lys Ser  
 405 410 415  
 Cys Ser Asp Cys Gly Thr Cys Thr Ser Cys Ala Glu Ala Thr Thr Tyr  
 420 425 430  
 Trp Lys Gly Val Ala Ala Thr His Met Cys Val Val Asp Thr Cys Asp

435	440	445
Pro Val Cys Val Gly Glu Asn Thr Val Tyr Arg Ile Cys Val Thr Asn		
450	455	460
Arg Gly Ser Ala Glu Asp Thr Asn Val Ser Leu Met Leu Lys Phe Ser		
465	470	475
Lys Glu Leu Gln Pro Val Ser Phe Ser Gly Pro Thr Lys Gly Thr Ile		
	485	490
Thr Gly Asn Thr Val Val Phe Asp Ser Leu Pro Arg Leu Gly Ser Lys		
	500	505
Glu Thr Val Glu Phe Ser Val Thr Leu Lys Ala Val Ser Ala Gly Asp		
	515	520
Ala Arg Gly Glu Ala Ile Leu Ser Ser Asp Thr Leu Thr Val Pro Val		
	530	535
Ser Asp Thr Glu Asn Thr His Ile Tyr		
545	550	

<210> 442  
 <211> 192  
 <212> PRT  
 <213> Chlamydia trachomatis serovar D

<400> 442
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Lys Leu Leu Asp Ser Arg Arg Ile Phe Phe Ser Glu Pro Val Thr Glu
20 25 30
Lys Ser Ala Thr Glu Ala Ile Lys Lys Leu Trp Tyr Leu Glu Leu Thr
35 40 45
Asn Pro Gly Gln Pro Ile Val Phe Val Ile Asn Ser Pro Gly Gly Ser
50 55 60
Val Asp Ala Gly Phe Ala Val Trp Asp Gln Ile Lys Met Ile Ser Ser
65 70 75 80
Pro Leu Thr Thr Val Val Thr Gly Leu Ala Ala Ser Met Gly Ser Val
85 90 95
Leu Ser Leu Cys Ala Val Pro Gly Arg Arg Phe Ala Thr Pro His Ala
100 105 110
Arg Ile Met Ile His Gln Pro Ser Ile Gly Gly Thr Ile Thr Gly Gln
115 120 125
Ala Thr Asp Leu Asp Ile His Ala Arg Glu Ile Leu Lys Thr Lys Ala
130 135 140
Arg Ile Ile Asp Val Tyr Val Glu Ala Thr Gly Gln Ser Arg Glu Val
145 150 155 160
Ile Glu Lys Ala Ile Asp Arg Asp Met Trp Met Ser Ala Asn Glu Ala

				165					170					175		
Met	Glu	Phe	Gly 180	Leu	Leu	Asp	Gly	Ile 185	Leu	Phe	Ser	Phe	Asn 190	Asp	Leu	
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<211>	275															
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<213>	Chlamydia trachomatis serovar D															
<400>	443															
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Gly	Ala	Gly	Asn 20	Ser	Phe	Ile	Leu	Gly 25	Glu	Ser	Met	Pro	Ser 30	Leu	Glu	
Asp	Val	Leu 35	Phe	Leu	Cys	Gln	Glu 40	Glu	Met	Val	Asp	Gly 45	Phe	Leu	Cys	
Val	Glu 50	Ser	Ser	Glu	Ile	Ala 55	Asp	Ala	Lys	Leu	Thr 60	Val	Phe	Asn	Ser	
Asp 65	Gly	Ser	Ile	Ala	Ser 70	Met	Cys	Gly	Asn	Gly 75	Leu	Arg	Cys	Ala	Met 80	
Ala	His	Val	Ala	Gln 85	Cys	Phe	Gly	Leu	Glu 90	Asp	Val	Ser	Ile	Glu 95	Thr	
Glu	Arg	Gly	Val 100	Tyr	Gln	Gly	Lys	Phe 105	Phe	Ser	Met	Asn	Arg 110	Val	Leu	
Val	Asp	Met 115	Thr	Leu	Pro	Asp	Trp 120	Lys	Lys	Ala	Glu	Arg 125	Lys	Leu	Thr	
His 130	Val	Leu	Pro	Gly	Met	Pro 135	Glu	Gln	Val	Phe	Phe 140	Ile	Asp	Thr	Gly	
Val 145	Pro	His	Val	Val	Val 150	Phe	Val	Ser	Asp	Leu 155	Ser	Lys	Val	Pro	Val 160	
Gln	Glu	Trp	Gly	Ser 165	Phe	Leu	Arg	Tyr	His 170	Glu	Asp	Phe	Ala	Pro 175	Glu	
Gly	Val	Asn 180	Val	Asp	Phe	Val	Gln	Arg 185	Lys	Lys	Asp	Asp	Leu 190	Leu	Leu	
Val	Tyr	Thr 195	Tyr	Glu	Arg	Gly	Cys 200	Glu	Arg	Glu	Thr	Leu 205	Ser	Cys	Gly	
Thr	Gly 210	Met	Leu	Ala	Ser	Ala 215	Leu	Val	Ala	Ala	Asp 220	Ile	Phe	Ser	Leu	
Gly 225	Gln	Asp	Phe	Ser	Ile 230	Ala	Val	Cys	Ser	Arg 235	Ser	Arg	Asn	Leu	Ile 240	
Lys	Ile	Phe	Ser	Glu 245	Lys	Gly	Lys	Val	Phe 250	Leu	Glu	Gly	Pro	Val 255	Ser	
Leu	Leu	Asn	Arg	Ser	Glu	Asn	Phe	Gly	Trp	Leu	Glu	Pro	Lys	Ser	Arg	

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 Arg Phe Gly  
 275  
  
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 <211> 1770  
 <212> PRT  
 <213> Chlamydia trachomatis serovar D  
  
 <400> 444  
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 Val Thr Glu Ala Ser Ser Ile Gln Asp Gln Ile Lys Asn Thr Asp Cys  
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 Asn Val Ser Lys Leu Gly Tyr Ser Thr Ser Gln Ala Phe Thr Asp Met  
 35 40 45  
 Met Leu Ala Asp Asn Thr Glu Tyr Arg Ala Ala Asp Ser Val Ser Phe  
 50 55 60  
 Tyr Asp Phe Ser Thr Ser Ser Arg Leu Pro Arg Lys His Leu Ser Ser  
 65 70 75 80  
 Ser Ser Glu Ala Ser Pro Thr Thr Glu Gly Val Ser Ser Ser Ser Ser  
 85 90 95  
 Gly Glu Thr Asp Glu Lys Thr Glu Glu Glu Leu Asp Asn Gly Gly Ile  
 100 105 110  
 Ile Tyr Ala Arg Glu Lys Leu Thr Ile Ser Glu Ser Gln Asp Ser Leu  
 115 120 125  
 Ser Asn Gln Ser Ile Glu Leu His Asp Asn Ser Ile Phe Phe Gly Glu  
 130 135 140  
 Gly Glu Val Ile Phe Asp His Arg Val Ala Leu Lys Asn Gly Gly Ala  
 145 150 155 160  
 Ile Tyr Gly Glu Lys Glu Val Val Phe Glu Asn Ile Lys Ser Leu Leu  
 165 170 175  
 Val Glu Val Asn Ile Ala Val Glu Lys Gly Gly Ser Val Tyr Ala Lys  
 180 185 190  
 Glu Arg Val Ser Leu Glu Asn Val Thr Glu Ala Thr Phe Ser Ser Asn  
 195 200 205  
 Gly Gly Glu Gln Gly Gly Gly Gly Ile Tyr Ser Glu Gln Asp Met Leu  
 210 215 220  
 Ile Ser Asp Cys Asn Asn Val His Phe Gln Gly Asn Ala Ala Gly Ala  
 225 230 235 240  
 Thr Ala Val Lys Gln Cys Leu Asp Glu Glu Met Ile Val Leu Leu Ala  
 245 250 255  
 Glu Cys Val Asp Ser Leu Ser Glu Asp Thr Leu Asp Ser Thr Pro Glu

260					265					270					
Thr	Glu	Gln	Thr	Glu	Ser	Asn	Gly	Asn	Gln	Asp	Gly	Ser	Ser	Glu	Thr
		275					280					285			
Glu	Asp	Thr	Gln	Val	Ser	Glu	Ser	Pro	Glu	Ser	Thr	Pro	Ser	Pro	Asp
		290					295					300			
Asp	Val	Leu	Gly	Lys	Gly	Gly	Gly	Ile	Tyr	Thr	Glu	Lys	Ser	Leu	Thr
							310					315			
Ile	Thr	Gly	Ile	Thr	Gly	Thr	Ile	Asp	Phe	Val	Ser	Asn	Ile	Ala	Thr
											330				
Asp	Ser	Gly	Ala	Gly	Val	Phe	Thr	Lys	Glu	Asn	Leu	Ser	Cys	Thr	Asn
											345				
Thr	Asn	Ser	Leu	Gln	Phe	Leu	Lys	Asn	Ser	Ala	Gly	Gln	His	Gly	Gly
											365				
Gly	Ala	Tyr	Val	Thr	Gln	Thr	Met	Ser	Val	Thr	Asn	Thr	Thr	Ser	Glu
							375					380			
Ser	Ile	Thr	Thr	Pro	Pro	Leu	Ile	Gly	Glu	Val	Ile	Phe	Ser	Glu	Asn
											395				
Thr	Ala	Lys	Gly	His	Gly	Gly	Gly	Ile	Cys	Thr	Asn	Lys	Leu	Ser	Leu
											410				
Ser	Asn	Leu	Lys	Thr	Val	Thr	Leu	Thr	Lys	Asn	Ser	Ala	Lys	Glu	Ser
											425				
Gly	Gly	Ala	Ile	Phe	Thr	Asp	Leu	Ala	Ser	Ile	Pro	Ile	Thr	Asp	Thr
											445				
Pro	Glu	Ser	Ser	Thr	Pro	Ser	Ser	Ser	Ser	Pro	Ala	Ser	Thr	Pro	Glu
											460				
Val	Val	Ala	Ser	Ala	Lys	Ile	Asn	Arg	Phe	Phe	Ala	Ser	Thr	Ala	Lys
											475				
Pro	Ala	Ala	Pro	Ser	Leu	Thr	Glu	Ala	Glu	Ser	Asp	Gln	Thr	Asp	Gln
											490				
Thr	Glu	Thr	Ser	Asp	Thr	Asn	Ser	Asp	Ile	Asp	Val	Ser	Ile	Glu	Asn
											505				
Ile	Leu	Asn	Val	Ala	Ile	Asn	Gln	Asn	Thr	Ser	Ala	Lys	Lys	Gly	Gly
											525				
Ala	Ile	Tyr	Gly	Lys	Lys	Ala	Lys	Leu	Ser	Arg	Ile	Asn	Asn	Leu	Glu
												540			
Leu	Ser	Gly	Asn	Ser	Ser	Gln	Asp	Val	Gly	Gly	Gly	Leu	Cys	Leu	Thr
												555			
Glu	Ser	Val	Glu	Phe	Asp	Ala	Ile	Gly	Ser	Leu	Leu	Ser	His	Tyr	Asn
											570				
Ser	Ala	Ala	Lys	Glu	Gly	Gly	Ala	Ile	His	Ser	Lys	Thr	Val	Thr	Leu
												590			



Ile Ala Thr Pro Val Val Phe Ser Lys Asn Ser Ala Thr Asn Asn Ala  
 915 920 925  
 Asn Asn Thr Thr Asp Thr Gln Arg Lys Asp Thr Phe Gly Gly Ala Ile  
 930 935 940  
 Gly Ala Thr Ser Ala Val Ser Leu Ser Gly Gly Ala His Phe Leu Glu  
 945 950 955 960  
 Asn Val Ala Asp Leu Gly Ser Ala Ile Gly Leu Val Pro Gly Thr Gln  
 965 970 975  
 Asn Thr Glu Thr Val Lys Leu Glu Ser Gly Ser Tyr Tyr Phe Glu Lys  
 980 985 990  
 Asn Lys Ala Leu Lys Arg Ala Thr Ile Tyr Ala Pro Val Val Ser Ile  
 995 1000 1005  
 Lys Ala Tyr Thr Ala Thr Phe Asn Gln Asn Arg Ser Leu Glu Glu Gly  
 1010 1015 1020  
 Ser Ala Ile Tyr Phe Thr Lys Glu Ala Ser Ile Glu Ser Leu Gly Ser  
 1025 1030 1035 1040  
 Val Leu Phe Thr Gly Asn Leu Val Thr Leu Thr Leu Ser Thr Thr Thr  
 1045 1050 1055  
 Glu Gly Thr Pro Ala Thr Thr Ser Gly Asp Val Thr Lys Tyr Gly Ala  
 1060 1065 1070  
 Ala Ile Phe Gly Gln Ile Ala Ser Ser Asn Gly Ser Gln Thr Asp Asn  
 1075 1080 1085  
 Leu Pro Leu Lys Leu Ile Ala Ser Gly Gly Asn Ile Cys Phe Arg Asn  
 1090 1095 1100  
 Asn Glu Tyr Arg Pro Thr Ser Ser Asp Thr Gly Thr Ser Thr Phe Cys  
 1105 1110 1115 1120  
 Ser Ile Ala Gly Asp Val Lys Leu Thr Met Gln Ala Ala Lys Gly Lys  
 1125 1130 1135  
 Thr Ile Ser Phe Phe Asp Ala Ile Arg Thr Ser Thr Lys Lys Thr Gly  
 1140 1145 1150  
 Thr Gln Ala Thr Ala Tyr Asp Thr Leu Asp Ile Asn Lys Ser Glu Asp  
 1155 1160 1165  
 Ser Glu Thr Val Asn Ser Ala Phe Thr Gly Thr Ile Leu Phe Ser Ser  
 1170 1175 1180  
 Glu Leu His Glu Asn Lys Ser Tyr Ile Pro Gln Asn Val Val Leu His  
 1185 1190 1195 1200  
 Ser Gly Ser Leu Val Leu Lys Pro Asn Thr Glu Leu His Val Ile Ser  
 1205 1210 1215  
 Phe Glu Gln Lys Glu Gly Ser Ser Leu Val Met Thr Pro Gly Ser Val  
 1220 1225 1230  
 Leu Ser Asn Gln Thr Val Ala Asp Gly Ala Leu Val Ile Asn Asn Met



1235					1240					1245						
Thr	Ile	Asp	Leu	Ser	Ser	Val	Glu	Lys	Asn	Gly	Ile	Ala	Glu	Gly	Asn	
1250					1255					1260						
Ile	Phe	Thr	Pro	Pro	Glu	Leu	Arg	Ile	Ile	Asp	Thr	Thr	Thr	Gly	Gly	
1265					1270					1275					1280	
Ser	Gly	Gly	Thr	Pro	Ser	Thr	Asp	Ser	Glu	Ser	Asn	Gln	Asn	Ser	Asp	
1285					1290					1295						
Asp	Thr	Glu	Glu	Gln	Asn	Asn	Asn	Asp	Ala	Ser	Asn	Gln	Gly	Glu	Ser	
1300					1305					1310						
Ala	Asn	Gly	Ser	Ser	Ser	Pro	Ala	Val	Ala	Ala	Ala	His	Thr	Ser	Arg	
1315					1320					1325						
Thr	Arg	Asn	Phe	Ala	Ala	Ala	Thr	Ala	Thr	Pro	Thr	Thr	Thr	Pro		
1330					1335					1340						
Thr	Ala	Thr	Thr	Thr	Thr	Ser	Asn	Gln	Val	Ile	Leu	Gly	Gly	Glu	Ile	
1345					1350					1355					1360	
Lys	Leu	Ile	Asp	Pro	Asn	Gly	Thr	Phe	Phe	Gln	Asn	Pro	Ala	Leu	Arg	
1365					1370					1375						
Ser	Asp	Gln	Gln	Ile	Ser	Leu	Leu	Val	Leu	Pro	Thr	Asp	Ser	Ser	Lys	
1380					1385					1390						
Met	Gln	Ala	Gln	Lys	Ile	Val	Leu	Thr	Gly	Asp	Ile	Ala	Pro	Gln	Lys	
1395					1400					1405						
Gly	Tyr	Thr	Gly	Thr	Leu	Thr	Leu	Asp	Pro	Asp	Gln	Leu	Gln	Asn	Gly	
1410					1415					1420						
Thr	Ile	Ser	Val	Leu	Trp	Lys	Phe	Asp	Ser	Tyr	Arg	Gln	Trp	Ala	Tyr	
1425					1430					1435					1440	
Val	Pro	Arg	Asp	Asn	His	Phe	Tyr	Ala	Asn	Ser	Ile	Leu	Gly	Ser	Gln	
1445					1450					1455						
Met	Leu	Met	Val	Thr	Val	Lys	Gln	Gly	Leu	Leu	Asn	Asp	Lys	Met	Asn	
1460					1465					1470						
Leu	Ala	Arg	Phe	Glu	Glu	Val	Ser	Tyr	Asn	Asn	Leu	Trp	Ile	Ser	Gly	
1475					1480					1485						
Leu	Gly	Thr	Met	Leu	Ser	Gln	Val	Gly	Thr	Pro	Thr	Ser	Glu	Glu	Phe	
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Thr	Tyr	Tyr	Ser	Arg	Gly	Ala	Ser	Val	Ala	Leu	Asp	Ala	Lys	Pro	Ala	
1505					1510					1515					1520	
His	Asp	Val	Ile	Val	Gly	Ala	Ala	Phe	Ser	Lys	Met	Ile	Gly	Lys	Thr	
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Lys	Ser	Leu	Lys	Arg	Glu	Asn	Asn	Tyr	Thr	His	Lys	Gly	Ser	Glu	Tyr	
1540					1545					1550						
Ser	Tyr	Gln	Ala	Ser	Val	Tyr	Gly	Gly	Lys	Pro	Phe	His	Phe	Val	Ile	
1555					1560					1565						

Asn Lys Lys Thr Glu Lys Ser Leu Pro Leu Leu Leu Gln Gly Val Ile  
 1570 1575 1580  
 Ser Tyr Gly Tyr Ile Lys His Asp Thr Val Thr His Tyr Pro Thr Ile  
 1585 1590 1595 1600  
 Arg Glu Arg Asn Lys Gly Glu Trp Glu Asp Leu Gly Trp Leu Thr Ala  
 1605 1610 1615  
 Leu Arg Val Ser Ser Val Leu Arg Thr Pro Ala Gln Gly Asp Thr Lys  
 1620 1625 1630  
 Arg Ile Thr Val Tyr Gly Glu Leu Glu Tyr Ser Ser Ile Arg Gln Lys  
 1635 1640 1645  
 Gln Phe Thr Glu Thr Glu Tyr Asp Pro Arg Tyr Phe Asp Asn Cys Thr  
 1650 1655 1660  
 Tyr Arg Asn Leu Ala Ile Pro Met Gly Leu Ala Phe Glu Gly Glu Leu  
 1665 1670 1675 1680  
 Ser Gly Asn Asp Ile Leu Met Tyr Asn Arg Phe Ser Val Ala Tyr Met  
 1685 1690 1695  
 Leu Ser Ile Tyr Arg Asn Ser Pro Thr Cys Lys Tyr Gln Val Leu Ser  
 1700 1705 1710  
 Ser Gly Glu Gly Gly Glu Ile Ile Cys Gly Val Pro Thr Arg Asn Ser  
 1715 1720 1725  
 Ala Arg Gly Glu Tyr Ser Thr Gln Leu Tyr Leu Gly Pro Leu Trp Thr  
 1730 1735 1740  
 Leu Tyr Gly Ser Tyr Thr Ile Glu Ala Asp Ala His Thr Leu Ala His  
 1745 1750 1755 1760  
 Met Met Asn Cys Gly Ala Arg Met Thr Phe  
 1765 1770

&lt;210&gt; 445

&lt;211&gt; 1751

&lt;212&gt; PRT

&lt;213&gt; Chlamydia trachomatis serovar D

&lt;400&gt; 445

Met Lys Trp Leu Ser Ala Thr Ala Val Phe Ala Ala Val Leu Pro Ser  
 5 10 15  
 Val Ser Gly Phe Cys Phe Pro Glu Pro Lys Glu Leu Asn Phe Ser Arg  
 20 25 30  
 Val Gly Thr Ser Ser Ser Thr Thr Phe Thr Glu Thr Val Gly Glu Ala  
 35 40 45  
 Gly Ala Glu Tyr Ile Val Ser Gly Asn Ala Ser Phe Thr Lys Phe Thr  
 50 55 60  
 Asn Ile Pro Thr Thr Asp Thr Thr Thr Pro Thr Asn Ser Asn Ser Ser  
 65 70 75 80

Ser	Ser	Asn	Gly	Glu	Thr	Ala	Ser	Val	Ser	Glu	Asp	Ser	Asp	Ser	Thr	85	90	95
Thr	Thr	Thr	Pro	Asp	Pro	Lys	Gly	Gly	Gly	Ala	Phe	Tyr	Asn	Ala	His	100	105	110
Ser	Gly	Val	Leu	Ser	Phe	Met	Thr	Arg	Ser	Gly	Thr	Glu	Gly	Ser	Leu	115	120	125
Thr	Leu	Ser	Glu	Ile	Lys	Ile	Thr	Gly	Glu	Gly	Gly	Ala	Ile	Phe	Ser	130	135	140
Gln	Gly	Glu	Leu	Leu	Phe	Thr	Asp	Leu	Thr	Gly	Leu	Thr	Ile	Gln	Asn	145	150	155
Asn	Leu	Ser	Gln	Leu	Ser	Gly	Gly	Ala	Ile	Phe	Gly	Glu	Ser	Thr	Ile	165	170	175
Ser	Leu	Ser	Gly	Ile	Thr	Lys	Ala	Thr	Phe	Ser	Ser	Asn	Ser	Ala	Glu	180	185	190
Val	Pro	Ala	Pro	Val	Lys	Lys	Pro	Thr	Glu	Pro	Lys	Ala	Gln	Thr	Ala	195	200	205
Ser	Glu	Thr	Ser	Gly	Ser	Ser	Ser	Ser	Ser	Gly	Asn	Asp	Ser	Val	Ser	210	215	220
Ser	Pro	Ser	Ser	Ser	Arg	Ala	Glu	Pro	Ala	Ala	Ala	Asn	Leu	Gln	Ser	225	230	235
His	Phe	Ile	Cys	Ala	Thr	Ala	Thr	Pro	Ala	Ala	Gln	Thr	Asp	Thr	Glu	245	250	255
Thr	Ser	Thr	Pro	Ser	His	Lys	Pro	Gly	Ser	Gly	Gly	Ala	Ile	Tyr	Ala	260	265	270
Lys	Gly	Asp	Leu	Thr	Ile	Ala	Asp	Ser	Gln	Glu	Val	Leu	Phe	Ser	Ile	275	280	285
Asn	Lys	Ala	Thr	Lys	Asp	Gly	Gly	Ala	Ile	Phe	Ala	Glu	Lys	Asp	Val	290	295	300
Ser	Phe	Glu	Asn	Ile	Thr	Ser	Leu	Lys	Val	Gln	Thr	Asn	Gly	Ala	Glu	305	310	315
Glu	Lys	Gly	Gly	Ala	Ile	Tyr	Ala	Lys	Gly	Asp	Leu	Ser	Ile	Gln	Ser	325	330	335
Ser	Lys	Gln	Ser	Leu	Phe	Asn	Ser	Asn	Tyr	Ser	Lys	Gln	Gly	Gly	Gly	340	345	350
Ala	Leu	Tyr	Val	Glu	Gly	Asp	Ile	Asn	Phe	Gln	Asp	Leu	Glu	Glu	Ile	355	360	365
Arg	Ile	Lys	Tyr	Asn	Lys	Ala	Gly	Thr	Phe	Glu	Thr	Lys	Lys	Ile	Thr	370	375	380
Leu	Pro	Lys	Ala	Gln	Ala	Ser	Ala	Gly	Asn	Ala	Asp	Ala	Trp	Ala	Ser	385	390	395
																		400

Ser Ser Pro Gln Ser Gly Ser Gly Ala Thr Thr Val Ser Asn Ser Gly  
 405 410 415  
 Asp Ser Ser Ser Gly Ser Asp Ser Asp Thr Ser Glu Thr Val Pro Ala  
 420 425 430  
 Thr Ala Lys Gly Gly Gly Leu Tyr Thr Asp Lys Asn Leu Ser Ile Thr  
 435 440 445  
 Asn Ile Thr Gly Ile Ile Glu Ile Ala Asn Asn Lys Ala Thr Asp Val  
 450 455 460  
 Gly Gly Gly Ala Tyr Val Lys Gly Thr Leu Thr Cys Glu Asn Ser His  
 465 470 475 480  
 Arg Leu Gln Phe Leu Lys Asn Ser Ser Asp Lys Gln Gly Gly Gly Ile  
 485 490 495  
 Tyr Gly Glu Asp Asn Ile Thr Leu Ser Asn Leu Thr Gly Lys Thr Leu  
 500 505 510  
 Phe Gln Glu Asn Thr Ala Lys Glu Glu Gly Gly Gly Leu Phe Ile Lys  
 515 520 525  
 Gly Thr Asp Lys Ala Leu Thr Met Thr Gly Leu Asp Ser Phe Cys Leu  
 530 535 540  
 Ile Asn Asn Thr Ser Glu Lys His Gly Gly Gly Ala Phe Val Thr Lys  
 545 550 555 560  
 Glu Ile Ser Gln Thr Tyr Thr Ser Asp Val Glu Thr Ile Pro Gly Ile  
 565 570 575  
 Thr Pro Val His Gly Glu Thr Val Ile Thr Gly Asn Lys Ser Thr Gly  
 580 585 590  
 Gly Asn Gly Gly Gly Val Cys Thr Lys Arg Leu Ala Leu Ser Asn Leu  
 595 600 605  
 Gln Ser Ile Ser Ile Ser Gly Asn Ser Ala Ala Glu Asn Gly Gly Gly  
 610 615 620  
 Ala His Thr Cys Pro Asp Ser Phe Pro Thr Ala Asp Thr Ala Glu Gln  
 625 630 635 640  
 Pro Ala Ala Ala Ser Ala Ala Thr Ser Thr Pro Glu Ser Ala Pro Val  
 645 650 655  
 Val Ser Thr Ala Leu Ser Thr Pro Ser Ser Thr Val Ser Ser Leu  
 660 665 670  
 Thr Leu Leu Ala Ala Ser Ser Gln Ala Ser Pro Ala Thr Ser Asn Lys  
 675 680 685  
 Glu Thr Gln Asp Pro Asn Ala Asp Thr Asp Leu Leu Ile Asp Tyr Val  
 690 695 700  
 Val Asp Thr Thr Ile Ser Lys Asn Thr Ala Lys Lys Gly Gly Gly Ile  
 705 710 715 720  
 Tyr Ala Lys Lys Ala Lys Met Ser Arg Ile Asp Gln Leu Asn Ile Ser

725															730					735				
Glu	Asn	Ser	Ala	Thr	Glu	Ile	Gly	Gly	Gly	Ile	Cys	Cys	Lys	Glu	Ser									
			740					745					750											
Leu	Glu	Leu	Asp	Ala	Leu	Val	Ser	Leu	Ser	Val	Thr	Glu	Asn	Leu	Val									
		755					760					765												
Gly	Lys	Glu	Gly	Gly	Gly	Leu	His	Ala	Lys	Thr	Val	Asn	Ile	Ser	Asn									
	770					775					780													
Leu	Lys	Ser	Gly	Phe	Ser	Phe	Ser	Asn	Asn	Lys	Ala	Asn	Ser	Ser	Ser									
785					790					795					800									
Thr	Gly	Val	Ala	Thr	Thr	Ala	Ser	Ala	Pro	Ala	Ala	Ala	Ala	Ala	Ser									
				805					810						815									
Leu	Gln	Ala	Ala	Ala	Ala	Ala	Val	Pro	Ser	Ser	Pro	Ala	Thr	Pro	Thr									
			820					825					830											
Tyr	Ser	Gly	Val	Val	Gly	Gly	Ala	Ile	Tyr	Gly	Glu	Lys	Val	Thr	Phe									
		835					840					845												
Ser	Gln	Cys	Ser	Gly	Thr	Cys	Gln	Phe	Ser	Gly	Asn	Gln	Ala	Ile	Asp									
	850					855					860													
Asn	Asn	Pro	Ser	Gln	Ser	Ser	Leu	Asn	Val	Gln	Gly	Gly	Ala	Ile	Tyr									
865					870					875					880									
Ala	Lys	Thr	Ser	Leu	Ser	Ile	Gly	Ser	Ser	Asp	Ala	Gly	Thr	Ser	Tyr									
				885					890					895										
Ile	Phe	Ser	Gly	Asn	Ser	Val	Ser	Thr	Gly	Lys	Ser	Gln	Thr	Thr	Gly									
			900					905					910											
Gln	Ile	Ala	Gly	Gly	Ala	Ile	Tyr	Ser	Pro	Thr	Val	Thr	Leu	Asn	Cys									
		915					920					925												
Pro	Ala	Thr	Phe	Ser	Asn	Asn	Thr	Ala	Ser	Met	Ala	Thr	Pro	Lys	Thr									
	930					935					940													
Ser	Ser	Glu	Asp	Gly	Ser	Ser	Gly	Asn	Ser	Ile	Lys	Asp	Thr	Ile	Gly									
945					950					955					960									
Gly	Ala	Ile	Ala	Gly	Thr	Ala	Ile	Thr	Leu	Ser	Gly	Val	Ser	Arg	Phe									
				965					970						975									
Ser	Gly	Asn	Thr	Ala	Asp	Leu	Gly	Ala	Ala	Ile	Gly	Thr	Leu	Ala	Asn									
			980					985					990											
Ala	Asn	Thr	Pro	Ser	Ala	Thr	Ser	Gly	Ser	Gln	Asn	Ser	Ile	Thr	Glu									
		995					1000					1005												
Lys	Ile	Thr	Leu	Glu	Asn	Gly	Ser	Phe	Ile	Phe	Glu	Arg	Asn	Gln	Ala									
	1010					1015					1020													
Asn	Lys	Arg	Gly	Ala	Ile	Tyr	Ser	Pro	Ser	Val	Ser	Ile	Lys	Gly	Asn									
1025					1030					1035					1040									
Asn	Ile	Thr	Phe	Asn	Gln	Asn	Thr	Ser	Thr	His	Asp	Gly	Ser	Ala	Ile									
				1045					1050					1055										

Tyr Phe Thr Lys Asn Ala Thr Ile Glu Ser Leu Gly Ser Val Leu Phe  
 1060 1065 1070  
 Thr Gly Asn Asn Val Thr Ala Thr Gln Ala Ser Ser Ala Thr Ser Gly  
 1075 1080 1085  
 Gln Asn Thr Asn Thr Ala Asn Tyr Gly Ala Ala Ile Phe Gly Asp Pro  
 1090 1095 1100  
 Gly Thr Thr Gln Ser Ser Gln Thr Asp Ala Ile Leu Thr Leu Leu Ala  
 1105 1110 1115 1120  
 Ser Ser Gly Asn Ile Thr Phe Ser Asn Asn Ser Leu Gln Asn Asn Gln  
 1125 1130 1135  
 Gly Asp Thr Pro Ala Ser Lys Phe Cys Ser Ile Ala Gly Tyr Val Lys  
 1140 1145 1150  
 Leu Ser Leu Gln Ala Ala Lys Gly Lys Thr Ile Ser Phe Phe Asp Cys  
 1155 1160 1165  
 Val His Thr Ser Thr Lys Lys Ile Gly Ser Thr Gln Asn Val Tyr Glu  
 1170 1175 1180  
 Thr Leu Asp Ile Asn Lys Glu Glu Asn Ser Asn Pro Tyr Thr Gly Thr  
 1185 1190 1195 1200  
 Ile Val Phe Ser Ser Glu Leu His Glu Asn Lys Ser Tyr Ile Pro Gln  
 1205 1210 1215  
 Asn Ala Ile Leu His Asn Gly Thr Leu Val Leu Lys Glu Lys Thr Glu  
 1220 1225 1230  
 Leu His Val Val Ser Phe Glu Gln Lys Glu Gly Ser Lys Leu Ile Met  
 1235 1240 1245  
 Lys Pro Gly Ala Val Leu Ser Asn Gln Asn Ile Ala Asn Gly Ala Leu  
 1250 1255 1260  
 Val Ile Asn Gly Leu Thr Ile Asp Leu Ser Ser Met Gly Thr Pro Gln  
 1265 1270 1275 1280  
 Ala Gly Glu Ile Phe Ser Pro Pro Glu Leu Arg Ile Val Ala Thr Thr  
 1285 1290 1295  
 Ser Ser Ala Ser Gly Gly Ser Gly Val Ser Ser Ser Ile Pro Thr Asn  
 1300 1305 1310  
 Pro Lys Arg Ile Ser Ala Ala Ala Pro Ser Gly Ser Ala Ala Thr Thr  
 1315 1320 1325  
 Pro Thr Met Ser Glu Asn Lys Val Phe Leu Thr Gly Asp Leu Thr Leu  
 1330 1335 1340  
 Ile Asp Pro Asn Gly Asn Phe Tyr Gln Asn Pro Met Leu Gly Ser Asp  
 1345 1350 1355 1360  
 Leu Asp Val Pro Leu Ile Lys Leu Pro Thr Asn Thr Ser Asp Val Gln  
 1365 1370 1375

Val Tyr Asp Leu Thr Leu Ser Gly Asp Leu Phe Pro Gln Lys Gly Tyr  
 1380 1385 1390  
 Met Gly Thr Trp Thr Leu Asp Ser Asn Pro Gln Thr Gly Lys Leu Gln  
 1395 1400 1405  
 Ala Arg Trp Thr Phe Asp Thr Tyr Arg Arg Trp Val Tyr Ile Pro Arg  
 1410 1415 1420  
 Asp Asn His Phe Tyr Ala Asn Ser Ile Leu Gly Ser Gln Asn Ser Met  
 1425 1430 1435 1440  
 Ile Val Val Lys Gln Gly Leu Ile Asn Asn Met Leu Asn Asn Ala Arg  
 1445 1450 1455  
 Phe Asp Asp Ile Ala Tyr Asn Asn Phe Trp Val Ser Gly Val Gly Thr  
 1460 1465 1470  
 Phe Leu Ala Gln Gln Gly Thr Pro Leu Ser Glu Glu Phe Ser Tyr Tyr  
 1475 1480 1485  
 Ser Arg Gly Thr Ser Val Ala Ile Asp Ala Lys Pro Arg Gln Asp Phe  
 1490 1495 1500  
 Ile Leu Gly Ala Ala Phe Ser Lys Met Val Gly Lys Thr Lys Ala Ile  
 1505 1510 1515 1520  
 Lys Lys Met His Asn Tyr Phe His Lys Gly Ser Glu Tyr Ser Tyr Gln  
 1525 1530 1535  
 Ala Ser Val Tyr Gly Gly Lys Phe Leu Tyr Phe Leu Leu Asn Lys Gln  
 1540 1545 1550  
 His Gly Trp Ala Leu Pro Phe Leu Ile Gln Gly Val Val Ser Tyr Gly  
 1555 1560 1565  
 His Ile Lys His Asp Thr Thr Thr Leu Tyr Pro Ser Ile His Glu Arg  
 1570 1575 1580  
 Asn Lys Gly Asp Trp Glu Asp Leu Gly Trp Leu Ala Asp Leu Arg Ile  
 1585 1590 1595 1600  
 Ser Met Asp Leu Lys Glu Pro Ser Lys Asp Ser Ser Lys Arg Ile Thr  
 1605 1610 1615  
 Val Tyr Gly Glu Leu Glu Tyr Ser Ser Ile Arg Gln Lys Gln Phe Thr  
 1620 1625 1630  
 Glu Ile Asp Tyr Asp Pro Arg His Phe Asp Asp Cys Ala Tyr Arg Asn  
 1635 1640 1645  
 Leu Ser Leu Pro Val Gly Cys Ala Val Glu Gly Ala Ile Met Asn Cys  
 1650 1655 1660  
 Asn Ile Leu Met Tyr Asn Lys Leu Ala Leu Ala Tyr Met Pro Ser Ile  
 1665 1670 1675 1680  
 Tyr Arg Asn Asn Pro Val Cys Lys Tyr Arg Val Leu Ser Ser Asn Glu  
 1685 1690 1695  
 Ala Gly Gln Val Ile Cys Gly Val Pro Thr Arg Thr Ser Ala Arg Ala

1700					1705					1710						
Glu	Tyr	Ser	Thr	Gln	Leu	Tyr	Leu	Gly	Pro	Phe	Trp	Thr	Leu	Tyr	Gly	
1715					1720					1725						
Asn	Tyr	Thr	Ile	Asp	Val	Gly	Met	Tyr	Thr	Leu	Ser	Gln	Met	Thr	Ser	
1730					1735					1740						
Cys	Gly	Ala	Arg	Met	Ile	Phe										
1745					1750											
<210> 446																
<211> 660																
<212> PRT																
<213> Chlamydia trachomatis serovar D																
<400> 446																
Met	Ser	Glu	Lys	Arg	Lys	Ser	Asn	Lys	Ile	Ile	Gly	Ile	Asp	Leu	Gly	
					5						10					
Thr	Thr	Asn	Ser	Cys	Val	Ser	Val	Met	Glu	Gly	Gly	Gln	Pro	Lys	Val	
				20					25					30		
Ile	Ala	Ser	Ser	Glu	Gly	Thr	Arg	Thr	Thr	Pro	Ser	Ile	Val	Ala	Phe	
		35					40					45				
Lys	Gly	Gly	Glu	Thr	Leu	Val	Gly	Ile	Pro	Ala	Lys	Arg	Gln	Ala	Val	
		50					55					60				
Thr	Asn	Pro	Glu	Lys	Thr	Leu	Ala	Ser	Thr	Lys	Arg	Phe	Ile	Gly	Arg	
		65					70					75				
Lys	Phe	Ser	Glu	Val	Glu	Ser	Glu	Ile	Lys	Thr	Val	Pro	Tyr	Lys	Val	
				85						90					95	
Ala	Pro	Asn	Ser	Lys	Gly	Asp	Ala	Val	Phe	Asp	Val	Glu	Gln	Lys	Leu	
			100					105					110			
Tyr	Thr	Pro	Glu	Glu	Ile	Gly	Ala	Gln	Ile	Leu	Met	Lys	Met	Lys	Glu	
		115					120					125				
Thr	Ala	Glu	Ala	Tyr	Leu	Gly	Glu	Thr	Val	Thr	Glu	Ala	Val	Ile	Thr	
		130					135					140				
Val	Pro	Ala	Tyr	Phe	Asn	Asp	Ser	Gln	Arg	Ala	Ser	Thr	Lys	Asp	Ala	
		145					150					155				
Gly	Arg	Ile	Ala	Gly	Leu	Asp	Val	Lys	Arg	Ile	Ile	Pro	Glu	Pro	Thr	
				165						170					175	
Ala	Ala	Ala	Leu	Ala	Tyr	Gly	Ile	Asp	Lys	Glu	Gly	Asp	Lys	Lys	Ile	
			180					185					190			
Ala	Val	Phe	Asp	Leu	Gly	Gly	Gly	Thr	Phe	Asp	Ile	Ser	Ile	Leu	Glu	
		195					200					205				
Ile	Gly	Asp	Gly	Val	Phe	Glu	Val	Leu	Ser	Thr	Asn	Gly	Asp	Thr	His	
		210					215					220				
Leu	Gly	Gly	Asp	Asp	Phe	Asp	Gly	Val	Ile	Ile	Asn	Trp	Met	Leu	Asp	



225					230					235					240
Glu	Phe	Lys	Lys	Gln	Glu	Gly	Ile	Asp	Leu	Ser	Lys	Asp	Asn	Met	Ala
				245					250					255	
Leu	Gln	Arg	Leu	Lys	Asp	Ala	Ala	Glu	Lys	Ala	Lys	Ile	Glu	Leu	Ser
			260					265					270		
Gly	Val	Ser	Ser	Thr	Glu	Ile	Asn	Gln	Pro	Phe	Ile	Thr	Ile	Asp	Ala
		275					280					285			
Asn	Gly	Pro	Lys	His	Leu	Ala	Leu	Thr	Leu	Thr	Arg	Ala	Gln	Phe	Glu
	290					295					300				
His	Leu	Ala	Ser	Ser	Leu	Ile	Glu	Arg	Thr	Lys	Gln	Pro	Cys	Ala	Gln
305					310					315					320
Ala	Leu	Lys	Asp	Ala	Lys	Leu	Ser	Ala	Ser	Asp	Ile	Asp	Asp	Val	Leu
				325					330					335	
Leu	Val	Gly	Gly	Met	Ser	Arg	Met	Pro	Ala	Val	Gln	Ala	Val	Val	Lys
			340					345					350		
Glu	Ile	Phe	Gly	Lys	Glu	Pro	Asn	Lys	Gly	Val	Asn	Pro	Asp	Glu	Val
		355					360					365			
Val	Ala	Ile	Gly	Ala	Ala	Ile	Gln	Gly	Gly	Val	Leu	Gly	Gly	Glu	Val
	370					375					380				
Lys	Asp	Val	Leu	Leu	Leu	Asp	Val	Ile	Pro	Leu	Ser	Leu	Gly	Ile	Glu
385					390					395					400
Thr	Leu	Gly	Gly	Val	Met	Thr	Pro	Leu	Val	Glu	Arg	Asn	Thr	Thr	Ile
				405					410					415	
Pro	Thr	Gln	Lys	Lys	Gln	Ile	Phe	Ser	Thr	Ala	Ala	Asp	Asn	Gln	Pro
			420					425					430		
Ala	Val	Thr	Ile	Val	Val	Leu	Gln	Gly	Glu	Arg	Pro	Met	Ala	Lys	Asp
		435					440					445			
Asn	Lys	Glu	Ile	Gly	Arg	Phe	Asp	Leu	Thr	Asp	Ile	Pro	Pro	Ala	Pro
	450					455					460				
Arg	Gly	His	Pro	Gln	Ile	Glu	Val	Thr	Phe	Asp	Ile	Asp	Ala	Asn	Gly
465					470					475					480
Ile	Leu	His	Val	Ser	Ala	Lys	Asp	Ala	Ala	Ser	Gly	Arg	Glu	Gln	Lys
				485					490					495	
Ile	Arg	Ile	Glu	Ala	Ser	Ser	Gly	Leu	Lys	Glu	Asp	Glu	Ile	Gln	Gln
			500					505					510		
Met	Ile	Arg	Asp	Ala	Glu	Leu	His	Lys	Glu	Glu	Asp	Lys	Gln	Arg	Lys
		515					520					525			
Glu	Ala	Ser	Asp	Val	Lys	Asn	Glu	Ala	Asp	Gly	Met	Ile	Phe	Arg	Ala
	530					535					540				
Glu	Lys	Ala	Val	Lys	Asp	Tyr	His	Asp	Lys	Ile	Pro	Ala	Glu	Leu	Val
545					550					555					560

Lys	Glu	Ile	Glu	Glu	His	Ile	Glu	Lys	Val	Arg	Gln	Ala	Ile	Lys	Glu	
				565					570					575		
Asp	Ala	Ser	Thr	Thr	Ala	Ile	Lys	Ala	Ala	Ser	Asp	Glu	Leu	Ser	Thr	
				580					585					590		
His	Met	Gln	Lys	Ile	Gly	Glu	Ala	Met	Gln	Ala	Gln	Ser	Ala	Ser	Ala	
				595					600					605		
Ala	Ala	Ser	Ser	Ala	Ala	Asn	Ala	Gln	Gly	Gly	Pro	Asn	Ile	Asn	Ser	
				610					615					620		
Glu	Asp	Leu	Lys	Lys	His	Ser	Phe	Ser	Thr	Arg	Pro	Pro	Ala	Gly	Gly	
				625					630					635		
Ser	Ala	Ser	Ser	Thr	Asp	Asn	Ile	Glu	Asp	Ala	Asp	Val	Glu	Ile	Val	
				645					650					655		
Asp	Lys	Pro	Glu													
				660												

<210> 447  
<211> 326  
<212> PRT  
<213> Chlamydia trachomatis serovar D

<400> 447																
Met	Val	Ser	Gln	Thr	Val	Ser	Val	Ala	Val	Thr	Gly	Gly	Thr	Gly	Gln	
				5					10					15		
Ile	Ala	Tyr	Ser	Phe	Leu	Phe	Ser	Leu	Ala	His	Gly	Asp	Val	Phe	Gly	
				20					25					30		
Leu	Asp	Cys	Gly	Ile	Asp	Leu	Arg	Ile	Tyr	Asp	Ile	Pro	Gly	Thr	Glu	
				35					40					45		
Arg	Ala	Leu	Ser	Gly	Val	Arg	Met	Glu	Leu	Asp	Asp	Gly	Ala	Phe	Pro	
				50					55					60		
Leu	Leu	Gln	Arg	Val	Gln	Val	Thr	Thr	Ser	Leu	His	Asp	Ala	Phe	Asp	
				65					70					75		
Gly	Ile	Asp	Ala	Ala	Phe	Leu	Ile	Gly	Ser	Val	Pro	Arg	Gly	Pro	Gly	
				85					90					95		
Met	Glu	Arg	Arg	Asp	Leu	Leu	Lys	Lys	Asn	Gly	Glu	Ile	Phe	Ala	Thr	
				100					105					110		
Gln	Gly	Lys	Ala	Leu	Asn	Thr	Thr	Ala	Lys	Arg	Asp	Ala	Lys	Ile	Phe	
				115					120					125		
Val	Val	Gly	Asn	Pro	Val	Asn	Thr	Asn	Cys	Trp	Ile	Ala	Met	Asn	His	
				130					135					140		
Ala	Pro	Arg	Leu	Leu	Arg	Lys	Asn	Phe	His	Ala	Met	Leu	Arg	Leu	Asp	
				145					150					155		
Gln	Asn	Arg	Met	His	Ser	Met	Leu	Ser	His	Arg	Ala	Glu	Val	Pro	Leu	
				165					170					175		

Ser Ala Val Ser Gln Val Val Val Trp Gly Asn His Ser Ala Lys Gln  
 180 185 190  
 Val Pro Asp Phe Thr Gln Ala Leu Ile Asn Asp Arg Pro Ile Ala Glu  
 195 200 205  
 Thr Ile Ala Asp Arg Asp Trp Leu Glu Asn Ile Met Val Pro Ser Val  
 210 215 220  
 Gln Ser Arg Gly Ser Ala Val Ile Glu Ala Arg Gly Lys Ser Ser Ala  
 225 230 235 240  
 Ala Ser Ala Ala Arg Ala Leu Ala Glu Ala Ala Arg Ser Ile Tyr Gln  
 245 250 255  
 Pro Lys Glu Gly Glu Trp Phe Ser Ser Gly Val Cys Ser Asp His Asn  
 260 265 270  
 Pro Tyr Gly Leu Pro Glu Asp Leu Ile Phe Gly Phe Pro Cys Arg Met  
 275 280 285  
 Leu Ala Thr Gly Glu Tyr Glu Val Ile Pro Arg Leu Pro Trp Asp Ala  
 290 295 300  
 Phe Ile Arg Gly Lys Met Gln Ile Ser Leu Asp Glu Ile Leu Gln Glu  
 305 310 315 320  
 Lys Ala Ser Val Ser Leu  
 325

&lt;210&gt; 448

&lt;211&gt; 232

&lt;212&gt; PRT

&lt;213&gt; Chlamydia trachomatis serovar D

&lt;400&gt; 448

Met Thr Lys His Gly Lys Arg Ile Arg Gly Ile Gln Glu Thr Tyr Asp  
 5 10 15  
 Leu Ala Lys Ser Tyr Ser Leu Gly Glu Ala Ile Asp Ile Leu Lys Gln  
 20 25 30  
 Cys Pro Thr Val Arg Phe Asp Gln Thr Val Asp Val Ser Val Lys Leu  
 35 40 45  
 Gly Ile Asp Pro Arg Lys Ser Asp Gln Gln Ile Arg Gly Ser Val Ser  
 50 55 60  
 Leu Pro His Gly Thr Gly Lys Val Leu Arg Ile Leu Val Phe Ala Ala  
 65 70 75 80  
 Gly Asp Lys Ala Ala Glu Ala Ile Glu Ala Gly Ala Asp Phe Val Gly  
 85 90 95  
 Ser Asp Asp Leu Val Glu Lys Ile Lys Gly Gly Trp Val Asp Phe Asp  
 100 105 110  
 Val Ala Val Ala Thr Pro Asp Met Met Arg Glu Val Gly Lys Leu Gly  
 115 120 125

Lys Val Leu Gly Pro Arg Asn Leu Met Pro Thr Pro Lys Ala Gly Thr  
 130 135 140  
 Val Thr Thr Asp Val Val Lys Thr Val Ala Glu Leu Arg Lys Gly Lys  
 145 150 155 160  
 Ile Glu Phe Lys Ala Asp Arg Ala Gly Val Cys Asn Val Gly Val Ala  
 165 170 175  
 Lys Leu Ser Phe Asp Ser Ala Gln Ile Lys Glu Asn Val Glu Ala Leu  
 180 185 190  
 Cys Ala Ala Leu Val Lys Ala Lys Pro Ala Thr Ala Lys Gly Gln Tyr  
 195 200 205  
 Leu Val Asn Phe Thr Ile Ser Ser Thr Met Gly Pro Gly Val Thr Val  
 210 215 220  
 Asp Thr Arg Glu Leu Ile Ala Leu  
 225 230

&lt;210&gt; 449

&lt;211&gt; 1252

&lt;212&gt; PRT

&lt;213&gt; Chlamydia trachomatis serovar D

&lt;400&gt; 449

Met Phe Lys Cys Pro Glu Arg Val Ser Ile Lys Lys Lys Glu Asp Ile  
 5 10 15  
 Leu Asp Leu Pro Asn Leu Val Glu Val Gln Ile Lys Ser Tyr Lys Gln  
 20 25 30  
 Phe Leu Gln Ile Gly Lys Leu Ala Glu Glu Arg Glu Asn Ile Gly Leu  
 35 40 45  
 Glu Glu Val Phe Arg Glu Ile Phe Pro Ile Lys Ser Tyr Asn Glu Ala  
 50 55 60  
 Thr Ile Leu Glu Tyr Leu Ser Tyr Asn Leu Gly Val Pro Lys Tyr Ser  
 65 70 75 80  
 Pro Glu Glu Cys Ile Arg Arg Gly Ile Thr Tyr Ser Val Thr Leu Lys  
 85 90 95  
 Val Arg Phe Arg Leu Thr Asp Glu Thr Gly Ile Lys Glu Glu Glu Val  
 100 105 110  
 Tyr Met Gly Thr Ile Pro Ile Met Thr Asp Lys Gly Thr Phe Ile Ile  
 115 120 125  
 Asn Gly Ala Glu Arg Val Val Val Ser Gln Val His Arg Ser Pro Gly  
 130 135 140  
 Ile Asn Phe Glu Gln Glu Lys His Ser Lys Gly Asn Val Leu Phe Ser  
 145 150 155 160  
 Phe Arg Ile Ile Pro Tyr Arg Gly Ser Trp Leu Glu Ala Val Phe Asp  
 165 170 175

Ile	Asn	Asp	Leu	Ile	Tyr	Ile	His	Ile	Asp	Arg	Lys	Lys	Arg	Arg	Arg		
			180					185					190				
Lys	Ile	Leu	Ala	Met	Thr	Phe	Ile	Arg	Ala	Leu	Gly	Tyr	Ser	Thr	Asp		
		195					200					205					
Ala	Asp	Ile	Ile	Glu	Glu	Phe	Phe	Ser	Val	Glu	Glu	Arg	Ser	Leu	Arg		
	210					215					220						
Leu	Glu	Lys	Asp	Phe	Val	Ala	Leu	Val	Gly	Lys	Val	Leu	Ala	Asp	Asn		
225					230					235					240		
Val	Val	Asp	Ala	Asp	Ser	Ser	Leu	Val	Tyr	Gly	Lys	Ala	Gly	Glu	Lys		
				245					250					255			
Leu	Ser	Thr	Ala	Met	Leu	Lys	Arg	Ile	Leu	Asp	Ala	Gly	Val	Gln	Ser		
			260					265					270				
Leu	Lys	Ile	Ala	Val	Gly	Ala	Asp	Glu	Asn	His	Pro	Ile	Ile	Lys	Met		
	275						280					285					
Leu	Ala	Lys	Asp	Pro	Thr	Asp	Ser	Tyr	Glu	Ala	Ala	Leu	Lys	Asp	Phe		
	290					295					300						
Tyr	Arg	Arg	Leu	Arg	Pro	Gly	Glu	Pro	Ala	Thr	Leu	Val	Asn	Ala	Arg		
305					310					315					320		
Ser	Thr	Ile	Met	Arg	Leu	Phe	Phe	Asp	Ala	Lys	Arg	Tyr	Asn	Leu	Gly		
				325					330					335			
Arg	Val	Gly	Arg	Tyr	Lys	Leu	Asn	Lys	Lys	Leu	Gly	Phe	Pro	Leu	Asp		
			340					345					350				
Asp	Glu	Thr	Leu	Ser	Gln	Val	Thr	Leu	Arg	Lys	Glu	Asp	Val	Ile	Gly		
		355				360						365					
Ala	Leu	Lys	Tyr	Leu	Ile	Arg	Leu	Arg	Met	Gly	Asp	Glu	Lys	Thr	Ser		
	370					375					380						
Ile	Asp	Asp	Ile	Asp	His	Leu	Ala	Asn	Arg	Arg	Val	Arg	Ser	Val	Gly		
385					390					395					400		
Glu	Leu	Ile	Gln	Asn	His	Cys	Arg	Ser	Gly	Leu	Ala	Arg	Met	Glu	Lys		
			405						410					415			
Ile	Val	Arg	Glu	Arg	Met	Asn	Leu	Phe	Asp	Phe	Ser	Ser	Asp	Thr	Leu		
			420					425					430				
Thr	Pro	Gly	Lys	Ile	Ile	Ser	Ala	Lys	Gly	Leu	Val	Ser	Val	Leu	Lys		
		435					440					445					
Asp	Phe	Phe	Ser	Arg	Ser	Gln	Leu	Ser	Gln	Phe	Met	Asp	Gln	Thr	Asn		
	450					455					460						
Pro	Val	Ala	Glu	Leu	Thr	His	Lys	Arg	Arg	Leu	Ser	Ala	Leu	Gly	Pro		
465					470					475					480		
Gly	Gly	Leu	Asn	Arg	Glu	Arg	Ala	Gly	Phe	Glu	Val	Arg	Asp	Val	His		
			485						490					495			

Ala	Ser	His	Tyr	Gly	Arg	Ile	Cys	Pro	Ile	Glu	Thr	Pro	Glu	Gly	Pro
			500					505					510		
Asn	Ile	Gly	Leu	Ile	Thr	Ser	Leu	Ser	Ser	Phe	Ala	Lys	Ile	Asn	Glu
		515					520					525			
Phe	Gly	Phe	Ile	Glu	Thr	Pro	Tyr	Arg	Val	Val	Arg	Asp	Gly	Ile	Val
	530					535					540				
Thr	Asp	Glu	Ile	Glu	Tyr	Met	Thr	Ala	Asp	Val	Glu	Glu	Glu	Cys	Val
545					550					555					560
Ile	Ala	Gln	Ala	Ser	Ala	Glu	Leu	Asp	Glu	Tyr	Asp	Met	Phe	Lys	Thr
				565					570					575	
Pro	Val	Cys	Trp	Ala	Arg	Tyr	Lys	Gly	Glu	Ala	Phe	Glu	Ala	Asp	Thr
			580					585					590		
Ser	Thr	Val	Thr	His	Met	Asp	Val	Ser	Pro	Lys	Gln	Leu	Val	Ser	Val
		595					600					605			
Val	Thr	Gly	Leu	Ile	Pro	Phe	Leu	Glu	His	Asp	Asp	Ala	Asn	Arg	Ala
	610					615					620				
Leu	Met	Gly	Ser	Asn	Met	Gln	Arg	Gln	Ala	Val	Pro	Leu	Leu	Lys	Thr
625					630					635					640
Glu	Ala	Ala	Ile	Val	Gly	Thr	Gly	Leu	Glu	Gly	Arg	Ala	Ala	Lys	Asp
				645					650					655	
Ser	Gly	Ala	Ile	Ile	Val	Ala	Gln	Glu	Asp	Gly	Val	Val	Glu	Tyr	Val
			660					665					670		
Asp	Ser	Tyr	Glu	Ile	Val	Val	Ala	Lys	Lys	Asn	Asn	Pro	Thr	Leu	Lys
		675					680					685			
Asp	Arg	Tyr	Gln	Leu	Lys	Lys	Phe	Leu	Arg	Ser	Asn	Ser	Gly	Thr	Cys
	690					695					700				
Ile	Asn	Gln	Thr	Pro	Leu	Cys	Ser	Val	Gly	Asp	Val	Val	Thr	His	Gly
705					710					715					720
Asp	Val	Leu	Ala	Asp	Gly	Pro	Ala	Thr	Asp	Lys	Gly	Glu	Leu	Ala	Leu
				725					730					735	
Gly	Lys	Asn	Val	Leu	Val	Ala	Phe	Met	Pro	Trp	Tyr	Gly	Tyr	Asn	Phe
			740					745					750		
Glu	Asp	Ala	Ile	Ile	Ile	Ser	Glu	Arg	Leu	Ile	Lys	Gln	Asp	Ala	Tyr
		755					760					765			
Thr	Ser	Ile	Tyr	Ile	Glu	Glu	Phe	Glu	Leu	Thr	Ala	Arg	Asp	Thr	Lys
	770					775					780				
Leu	Gly	Lys	Glu	Glu	Ile	Thr	Arg	Asp	Ile	Pro	Asn	Val	Ser	Glu	Glu
785					790					795					800
Val	Leu	Ala	Asn	Leu	Gly	Glu	Asp	Gly	Val	Val	Arg	Ile	Gly	Ala	Glu
				805					810					815	
Val	Lys	Pro	Gly	Asp	Ile	Leu	Val	Gly	Lys	Ile	Thr	Pro	Lys	Ser	Glu

820					825					830					
Thr	Glu	Leu	Ala	Pro	Glu	Glu	Arg	Leu	Leu	Arg	Ala	Ile	Phe	Gly	Glu
		835					840					845			
Lys	Ala	Ala	Asp	Val	Lys	Asp	Ala	Ser	Leu	Thr	Val	Pro	Pro	Gly	Thr
	850					855					860				
Glu	Gly	Val	Val	Met	Asp	Val	Lys	Val	Phe	Ser	Arg	Lys	Asp	Arg	Leu
865						870					875				880
Ser	Lys	Ser	Asp	Asp	Glu	Leu	Val	Glu	Glu	Ala	Val	His	Leu	Lys	Asp
				885					890					895	
Leu	Gln	Lys	Glu	Tyr	Lys	Ser	Gln	Leu	Ala	Gln	Leu	Lys	Val	Glu	His
			900					905					910		
Arg	Glu	Lys	Leu	Gly	Ala	Leu	Leu	Leu	Asn	Glu	Lys	Ala	Pro	Ala	Ala
		915					920					925			
Ile	Ile	His	Arg	Arg	Ser	Ala	Asp	Ile	Leu	Val	Gln	Glu	Gly	Ala	Ile
	930					935					940				
Phe	Asp	Gln	Glu	Thr	Ile	Glu	Leu	Leu	Glu	Arg	Glu	Ser	Leu	Val	Asp
945						950					955				960
Leu	Leu	Met	Ala	Pro	Cys	Asp	Met	Tyr	Asp	Val	Leu	Lys	Asp	Ile	Leu
				965					970					975	
Ser	Ser	Tyr	Glu	Thr	Ala	Val	Gln	Arg	Leu	Glu	Val	Asn	Tyr	Lys	Thr
			980					985					990		
Glu	Ala	Glu	His	Ile	Lys	Glu	Gly	Asp	Ala	Asp	Leu	Asp	His	Gly	Val
		995					1000					1005			
Ile	Arg	Gln	Val	Lys	Val	Tyr	Val	Ala	Ser	Lys	Arg	Lys	Leu	Gln	Val
	1010					1015					1020				
Gly	Asp	Lys	Met	Ala	Gly	Arg	His	Gly	Asn	Lys	Gly	Val	Val	Ser	Lys
1025						1030					1035				1040
Ile	Val	Pro	Glu	Ala	Asp	Met	Pro	Phe	Leu	Ala	Asn	Gly	Glu	Thr	Val
				1045					1050					1055	
Gln	Met	Ile	Leu	Asn	Pro	Leu	Gly	Val	Pro	Ser	Arg	Met	Asn	Leu	Gly
			1060					1065					1070		
Gln	Val	Leu	Glu	Thr	His	Leu	Gly	Tyr	Ala	Ala	Lys	Thr	Ala	Gly	Ile
		1075					1080					1085			
Tyr	Val	Lys	Thr	Pro	Val	Phe	Glu	Gly	Phe	Pro	Glu	Ser	Arg	Ile	Trp
	1090					1095					1100				
Asp	Met	Met	Ile	Glu	Gln	Gly	Leu	Pro	Glu	Asp	Gly	Lys	Ser	Tyr	Leu
1105						1110					1115				1120
Phe	Asp	Gly	Lys	Thr	Gly	Glu	Arg	Phe	Asp	Ser	Lys	Val	Val	Val	Gly
				1125					1130					1135	
Tyr	Ile	Tyr	Met	Leu	Lys	Leu	Ser	His	Leu	Ile	Ala	Asp	Lys	Ile	His
			1140					1145					1150		

Ala Arg Ser Ile Gly Pro Tyr Ser Leu Val Thr Gln Gln Pro Leu Gly  
 1155 1160 1165

Gly Lys Ala Gln Met Gly Gly Gln Arg Phe Gly Glu Met Glu Val Trp  
 1170 1175 1180

Ala Leu Glu Ala Tyr Gly Val Ala His Met Leu Gln Glu Ile Leu Thr  
 1185 1190 1195 1200

Val Lys Ser Asp Asp Val Ser Gly Arg Thr Arg Ile Tyr Glu Ser Ile  
 1205 1210 1215

Val Lys Gly Glu Asn Leu Leu Arg Ser Gly Thr Pro Glu Ser Phe Asn  
 1220 1225 1230

Val Leu Ile Lys Glu Met Gln Gly Leu Gly Leu Asp Val Arg Pro Met  
 1235 1240 1245

Val Val Asp Ala  
 1250

&lt;210&gt; 450

&lt;211&gt; 298

&lt;212&gt; PRT

&lt;213&gt; Chlamydia trachomatis serovar D

&lt;400&gt; 450

Met Leu Lys Ile Asp Leu Thr Gly Lys Ile Ala Phe Ile Ala Gly Ile  
 5 10 15

Gly Asp Asp Asn Gly Tyr Gly Trp Gly Ile Ala Lys Met Leu Ala Glu  
 20 25 30

Ala Gly Ala Thr Ile Leu Val Gly Thr Trp Val Pro Ile Tyr Lys Ile  
 35 40 45

Phe Ser Gln Ser Leu Glu Leu Gly Lys Phe Asn Ala Ser Arg Glu Leu  
 50 55 60

Ser Asn Gly Glu Leu Leu Thr Phe Ala Lys Ile Tyr Pro Met Asp Ala  
 65 70 75 80

Ser Phe Asp Thr Pro Glu Asp Ile Pro Gln Glu Ile Leu Glu Asn Lys  
 85 90 95

Arg Tyr Lys Asp Leu Ser Gly Tyr Thr Val Ser Glu Val Val Glu Gln  
 100 105 110

Val Lys Lys His Phe Gly His Ile Asp Ile Leu Val His Ser Leu Ala  
 115 120 125

Asn Ser Pro Glu Ile Ala Lys Pro Leu Leu Asp Thr Ser Arg Lys Gly  
 130 135 140

Tyr Leu Ala Ala Leu Ser Thr Ser Ser Tyr Ser Phe Ile Ser Leu Leu  
 145 150 155 160

Ser His Phe Gly Pro Ile Met Asn Ala Gly Ala Ser Thr Ile Ser Leu  
 165 170 175



Thr Tyr Leu Ala Ser Met Arg Ala Val Pro Gly Tyr Gly Gly Gly Met  
 180 185 190  
 Asn Ala Ala Lys Ala Ala Leu Glu Ser Asp Thr Lys Val Leu Ala Trp  
 195 200 205  
 Glu Ala Gly Arg Arg Trp Gly Val Arg Val Asn Thr Ile Ser Ala Gly  
 210 215 220  
 Pro Leu Ala Ser Arg Ala Gly Lys Ala Ile Gly Phe Ile Glu Arg Met  
 225 230 235 240  
 Val Asp Tyr Tyr Gln Asp Trp Ala Pro Leu Pro Ser Pro Met Glu Ala  
 245 250 255  
 Glu Gln Val Gly Ala Ala Ala Ala Phe Leu Val Ser Pro Leu Ala Ser  
 260 265 270  
 Ala Ile Thr Gly Glu Thr Leu Tyr Val Asp His Gly Ala Asn Val Met  
 275 280 285  
 Gly Ile Gly Pro Glu Met Phe Pro Lys Asp  
 290 295

&lt;210&gt; 451

&lt;211&gt; 298

&lt;212&gt; PRT

&lt;213&gt; Chlamydia trachomatis serovar D

&lt;400&gt; 451

Met Ser Leu Gln Lys Leu Leu Val Thr Asp Ile Asp Gly Thr Ile Thr  
 5 10 15  
 His Gln Ser His Leu Leu His Asp Arg Val Val Lys Ala Leu His Gln  
 20 25 30  
 Tyr Tyr Asp Ser Gly Trp Gln Leu Phe Phe Leu Thr Gly Arg Tyr Phe  
 35 40 45  
 Ser Tyr Ala Tyr Pro Leu Phe Gln Asn Phe Ser Val Pro Phe Leu Leu  
 50 55 60  
 Gly Ser Gln Asn Gly Ser Ser Val Trp Ser Ser Thr Asp Lys Glu Phe  
 65 70 75 80  
 Ile Tyr Phe Arg Ser Leu Ser Arg Asp Phe Leu Tyr Val Leu Glu Lys  
 85 90 95  
 Tyr Phe Glu Asp Leu Asp Leu Ile Ala Cys Ile Glu Ser Gly Ala Ser  
 100 105 110  
 Asn Arg Asp Val Tyr Phe Arg Lys Gly Leu Gly Lys Thr Ser Gln Glu  
 115 120 125  
 Leu Lys Ala Ile Leu Asp Ala Val Tyr Phe Pro Thr Pro Glu Ala Ala  
 130 135 140  
 Arg Leu Leu Val Asp Val Gln Gly His Leu Ser Glu Glu Phe Ser Tyr  
 145 150 155 160

Glu	Asp	Phe	Ala	Ile	Ala	Lys	Phe	Phe	Gly	Glu	Arg	Glu	Glu	Val	Lys	
				165					170					175		
Lys	Ile	Met	Asp	Arg	Phe	Ile	Gln	Ser	Pro	Glu	Val	Ser	Ser	Gln	Val	
				180					185					190		
Thr	Met	Asn	Tyr	Met	Arg	Trp	Pro	Phe	Asp	Phe	Lys	Tyr	Ala	Val	Leu	
				195					200					205		
Leu	Leu	Thr	Leu	Lys	Asp	Val	Ser	Lys	Gly	Phe	Ala	Val	Asp	Gln	Val	
				210					215					220		
Val	Gln	Thr	Phe	Tyr	Lys	Glu	Asn	Lys	Pro	Phe	Ile	Met	Ala	Ser	Gly	
				225					230					235		
Asp	Asp	Ala	Asn	Asp	Ile	Asp	Leu	Leu	Ser	Arg	Gly	Asp	Phe	Lys	Ile	
				245					250					255		
Val	Ile	Gln	Thr	Ala	Pro	Glu	Glu	Met	His	Gly	Leu	Ala	Asp	Phe	Leu	
				260					265					270		
Ala	Pro	Pro	Ala	Lys	Asp	Phe	Gly	Ile	Leu	Ser	Ala	Trp	Glu	Ala	Gly	
				275					280					285		
Glu	Leu	Arg	Tyr	Lys	Gln	Leu	Val	Asn	Pro							
				290					295							

<210> 452

<211> 153

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 452

Met Leu Arg Leu Phe Gln His Ile Leu Cys Phe Leu Glu Glu Asp Pro  
5 10 15

Ser Phe Val Asp Val Pro Gln Glu Leu Ser Phe Val Asn Glu Ala Phe  
20 25 30

Ser Gly Ser Met Arg Trp Glu Val Gly Arg Met Leu Gly Ser Leu Leu  
35 40 45

Leu Leu Leu Gly Ile Phe Gly Gly Gly Cys Leu Leu Phe Arg Arg Phe  
50 55 60

Leu Arg Ser Arg Gly His Leu Pro Ser Gly Asn Ser Ser Ile Lys Ile  
65 70 75 80

Leu Asp Gln Arg Val Leu Ala Ser Lys Thr Ser Ile Tyr Val Ile Lys  
85 90 95

Val Ala Asn Lys Thr Leu Val Val Ala Glu Arg Gly Glu Arg Val Thr  
100 105 110

Leu Leu Ser Glu Phe Pro Pro Asn Thr Asp Leu Asn Glu Leu Ile Gln  
115 120 125

Lys Asp Gln Lys Lys Pro Ser Thr Pro Arg Gly Glu Met Leu Ser Gly  
130 135 140

Phe Leu Lys Gln Phe Lys Glu Lys Lys  
 145 150

<210> 453

<211> 569

<212> PRT

<213> Chlamydia trachomatis serovar D

<400> 453

Met Pro Lys Gln Ala Asp Tyr Thr Trp Gly Ala Lys Lys Asn Leu Asp  
                                   5                                  10                                  15

Thr Ile Ala Cys Leu Pro Glu Asp Val Lys Gln Phe Lys Asp Leu Leu  
                                   20                                  25                                  30

Tyr Ala Met Tyr Gly Phe Thr Ala Thr Glu Glu Glu Pro Thr Ser Glu  
                                   35                                  40                                  45

Val His Pro Gly Ala Ile Leu Lys Gly Thr Val Val Asp Ile Ser Lys  
                                   50                                  55                                  60

Asp Phe Val Val Val Asp Val Gly Leu Lys Ser Glu Gly Val Ile Pro  
   65                                  70                                  75                                  80

Met Ser Glu Phe Ile Asp Ser Ser Glu Gly Leu Thr Val Gly Ala Glu  
                                   85                                  90                                  95

Val Glu Val Tyr Leu Asp Gln Thr Glu Asp Asp Glu Gly Lys Val Val  
                                   100                                  105                                  110

Leu Ser Arg Glu Lys Ala Thr Arg Gln Arg Gln Trp Glu Tyr Ile Leu  
                                   115                                  120                                  125

Ala His Cys Glu Glu Gly Ser Ile Val Lys Gly Gln Ile Thr Arg Lys  
   130                                  135                                  140

Val Lys Gly Gly Leu Ile Val Asp Ile Gly Met Glu Ala Phe Leu Pro  
  145                                  150                                  155                                  160

Gly Ser Gln Ile Asp Asn Lys Lys Ile Lys Asn Leu Asp Asp Tyr Val  
                                   165                                  170                                  175

Gly Lys Val Cys Glu Phe Lys Ile Leu Lys Ile Asn Val Asp Arg Arg  
                                   180                                  185                                  190

Asn Val Val Val Ser Arg Arg Glu Leu Leu Glu Ala Glu Arg Ile Ser  
                                   195                                  200                                  205

Lys Lys Ala Glu Leu Ile Glu Gln Ile Thr Ile Gly Glu Arg Arg Lys  
   210                                  215                                  220

Gly Ile Val Lys Asn Ile Thr Asp Phe Gly Val Phe Leu Asp Leu Asp  
  225                                  230                                  235                                  240

Gly Ile Asp Gly Leu Leu His Ile Thr Asp Met Thr Trp Lys Arg Ile  
                                   245                                  250                                  255

Arg His Pro Ser Glu Met Val Glu Leu Asn Gln Glu Leu Glu Val Ile  
                                   260                                  265                                  270

Ile Leu Ser Val Asp Lys Glu Lys Gly Arg Val Ala Leu Gly Leu Lys  
 275 280 285  
 Gln Lys Glu His Asn Pro Trp Glu Asp Ile Glu Lys Lys Tyr Pro Pro  
 290 295 300  
 Gly Lys Arg Val Arg Gly Lys Ile Val Lys Leu Leu Pro Tyr Gly Ala  
 305 310 315 320  
 Phe Ile Glu Ile Glu Glu Gly Ile Glu Gly Leu Ile His Val Ser Glu  
 325 330 335  
 Met Ser Trp Val Lys Asn Ile Val Asp Pro Asn Glu Val Val Asn Lys  
 340 345 350  
 Gly Asp Glu Val Glu Val Val Val Leu Ser Ile Gln Lys Asp Glu Gly  
 355 360 365  
 Lys Ile Ser Leu Gly Leu Lys Gln Thr Lys His Asn Pro Trp Asp Asn  
 370 375 380  
 Ile Glu Glu Lys Tyr Pro Ile Gly Leu Arg Val Thr Ala Glu Ile Lys  
 385 390 395 400  
 Asn Leu Thr Asn Tyr Gly Ala Phe Val Glu Leu Glu Pro Gly Ile Glu  
 405 410 415  
 Gly Leu Ile His Ile Ser Asp Met Ser Trp Ile Lys Lys Val Ser His  
 420 425 430  
 Pro Ser Glu Leu Phe Lys Lys Gly Asn Thr Val Glu Ala Val Ile Leu  
 435 440 445  
 Ser Val Asp Lys Glu Ser Lys Lys Ile Thr Leu Gly Val Lys Gln Leu  
 450 455 460  
 Thr Pro Asn Pro Trp Asp Glu Ile Glu Val Met Phe Pro Val Gly Ser  
 465 470 475 480  
 Asp Ile Ser Gly Val Val Thr Lys Ile Thr Ala Phe Gly Ala Phe Val  
 485 490 495  
 Glu Leu Gln Asn Gly Ile Glu Gly Leu Ile His Val Ser Glu Leu Ser  
 500 505 510  
 Glu Lys Pro Phe Ala Lys Ile Glu Asp Val Leu Ser Ile Gly Asp Lys  
 515 520 525  
 Val Ser Ala Lys Val Ile Lys Leu Asp Pro Asp His Lys Lys Val Ser  
 530 535 540  
 Leu Ser Ile Lys Glu Phe Leu Val His Gly Gly Asp Ala Gly His Asp  
 545 550 555 560  
 Ala Glu Glu Glu Ser Ser Asp Arg Asp  
 565

&lt;210&gt; 454

&lt;211&gt; 666

&lt;212&gt; PRT

&lt;213&gt; Chlamydia trachomatis serovar D

&lt;400&gt; 454

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Met Glu Ser Leu Ser Val Arg Ser Thr Ile Pro Leu Pro Leu Gly Ala
      5              10              15

Lys Lys Leu Ser Ala Asp Arg Tyr Arg Phe Ser Leu Phe Ser Ser Gln
      20              25              30

Ala Gln Gln Val Thr Leu Val Leu Leu Asp Pro Leu Ser Glu Ile His
      35              40              45

Glu Ile Pro Leu Ser Ser Thr Asp His Arg Thr Gly Ala Ile Trp His
      50              55              60

Ile Glu Ile Ala Gly Ile Ser Ser Glu Trp Ser Tyr Ala Tyr Lys Leu
      65              70              75              80

Arg Gly Thr Asp Leu Ser Ser Gln Lys Phe Ala Thr Asp Ser Tyr Ile
      85              90              95

Ala Asp Pro Tyr Ser Lys Asn Ile Tyr Ser Pro Gln Leu Phe Gly Ser
      100             105             110

Pro Lys Gln Glu Lys Asp Tyr Ala Phe Ser Tyr Leu Lys His Glu Asp
      115             120             125

Phe Asp Trp Glu Gly Asp Thr Pro Leu His Leu Pro Lys Glu Asn Tyr
      130             135             140

Phe Ile Tyr Glu Met His Val Arg Ser Phe Thr Arg Asp Pro Ser Ser
      145             150             155             160

Gln Val Ser His Pro Gly Thr Phe Leu Gly Ile Ile Glu Lys Ile Asp
      165             170             175

His Leu Lys Gln Leu Gly Val His Ala Val Glu Leu Leu Pro Ile Phe
      180             185             190

Glu Phe Asp Glu Thr Val His Pro Phe Lys Asn Gln Asp Phe Pro His
      195             200             205

Leu Cys Asn Tyr Trp Gly Tyr Ser Ser Val Asn Phe Phe Cys Pro Ser
      210             215             220

Arg Arg Tyr Thr Tyr Gly Ala Asp Pro Cys Ala Pro Ala Arg Glu Phe
      225             230             235             240

Lys Thr Leu Val Lys Ala Leu His Arg Ala Gly Ile Glu Val Ile Leu
      245             250             255

Asp Val Val Phe Asn His Thr Gly Phe Glu Gly Thr Ser Cys Pro Leu
      260             265             270

Pro Trp Ile Asp Leu Glu Ser Tyr Tyr Met Val Asn Asp His Gly Asp
      275             280             285

Leu Met Asn Phe Ser Gly Cys Gly Asn Thr Val Asn Thr Asn Thr Pro
      290             295             300

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Thr 305	Thr	Leu	Lys	Trp	Ile 310	Leu	Asp	Ala	Leu	Arg 315	Tyr	Trp	Val	Gln	Glu 320
Met	His	Val	Asp	Gly 325	Phe	Arg	Phe	Asp	Leu 330	Ala	Ser	Val	Phe	Ser 335	Arg
Asp	Pro	Gln	Gly 340	Val	Pro	Leu	Pro	Leu 345	Thr	Pro	Ile	Leu	Gln 350	Ala	Ile
Ser	Ser	Asp 355	Ser	Ile	Leu	Ser	Glu 360	Thr	Lys	Leu	Ile	Ala 365	Glu	Pro	Trp
Asp	Ala 370	Gly	Gly	Leu	Tyr	Gln 375	Leu	Gly	His	Phe	Pro 380	Ser	Ile	Ser	Thr
Arg 385	Trp	Ser	Glu	Trp	Asn 390	Gly	Cys	Tyr	Arg	Asp 395	His	Val	Lys	Ala	Phe 400
Leu	Asn	Gly	Asp 405	Ala	His	Gln	Val	Ser	Ser 410	Phe	Ala	Ser	Arg	Ile 415	Ser
Gly	Ser	His	Asp 420	Ile	Tyr	Pro	Asn	Gly 425	Lys	Pro	Thr	Asn 430	Ser	Ile	Asn
Tyr	Ile	Cys 435	Ser	His	Asp	Gly	Phe 440	Thr	Leu	Tyr	Asp 445	Thr	Val	Ala	Tyr
Asn 450	Asp	Lys	His	Asn	Glu	Glu 455	Asn	Gly	Glu	Tyr	Asn 460	Arg	Asp	Gly	Thr
Ser 465	Ala	Asn	Tyr	Ser	Tyr 470	Asn	Phe	Gly	Cys	Glu 475	Gly	Glu	Thr	Thr	Asp 480
Pro	Thr	Ile	Cys 485	Ala	Leu	Arg	Glu	Arg	Gln 490	Met	Lys	Asn	Phe	Phe 495	Leu
Ala	Leu	Phe	Leu 500	Ser	Gln	Gly	Ile	Pro 505	Met	Ile	Gln	Ser	Gly 510	Asp	Glu
Tyr	Gly 515	His	Thr	Ala	Tyr	Gly	Asn 520	Asn	Asn	His	Trp	Cys 525	Leu	Asp	Thr
Lys 530	Ile	Asn	Tyr	Phe	Leu	Trp 535	Asp	Arg	Leu	Ala	Glu 540	Arg	Lys	Glu	Leu
Phe 545	Ser	Phe	Leu	Cys	Gln 550	Val	Ile	Ala	Leu	Arg 555	Lys	Ala	Tyr	Thr	Glu 560
Leu	Phe	Asn	Thr 565	Ser	Phe	Leu	Ser	Glu	Asp 570	Thr	Ile	Thr	Trp	Leu 575	Asn
Thr	Lys	Gly 580	Ser	Pro	Arg	Glu	Trp	Gly 585	Ala	Asp	His	Tyr	Leu 590	Ala	Phe
Glu	Leu 595	Lys	His	Leu	Asn	Tyr	Ser 600	Leu	Phe	Val	Ala	Phe 605	Tyr	Ser	Gly
Asn 610	Glu	Arg	Ile	Glu	Ile	Ser 615	Leu	Pro	Lys	Pro	Arg 620	Lys	Glu	His	Leu
Ala	Tyr	Glu	Lys	Ile	Val	Asp	Ser	Thr	Thr	Gly	Phe	Phe	Ser	Gln	Ile

625	630	635	640
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Ser Arg Arg Lys Thr Ser Leu Glu Ser Arg			
	660	665	

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 <211> 882  
 <212> DNA  
 <213> Chlamydia pneumoniae

<400> 455

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 <211> 1185  
 <212> DNA  
 <213> Chlamydia pneumoniae

<400> 456

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<210> 457  
 <211> 1656  
 <212> DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 457

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&lt;210&gt; 458

&lt;211&gt; 294

&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 458

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&lt;210&gt; 459

&lt;211&gt; 618

&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 459

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 <212> DNA  
 <213> Chlamydia pneumoniae

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 <211> 975  
 <212> DNA  
 <213> Chlamydia pneumoniae

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975

&lt;210&gt; 462

&lt;211&gt; 1980

&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 462

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&lt;210&gt; 463

&lt;211&gt; 1236

&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 463

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&lt;210&gt; 464

&lt;211&gt; 1215

&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 464

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&lt;210&gt; 465

&lt;211&gt; 1632

&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 465

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&lt;210&gt; 466

&lt;211&gt; 312

&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 466

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&lt;210&gt; 467

&lt;211&gt; 1089

&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 467

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&lt;210&gt; 468

&lt;211&gt; 1308

&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 468

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&lt;210&gt; 469

&lt;211&gt; 1749

&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 469

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&lt;210&gt; 470

&lt;211&gt; 516

&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 470

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&lt;210&gt; 471

&lt;211&gt; 1083

&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 471

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&lt;210&gt; 472

&lt;211&gt; 1200

&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 472

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<210> 473

<211> 675

<212> DNA

<213> Chlamydia pneumoniae

<400> 473

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<210> 474

<211> 741

<212> DNA

<213> Chlamydia pneumoniae

<400> 474

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<210> 475

<211> 1062

<212> DNA

<213> Chlamydia pneumoniae

<400> 475

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&lt;210&gt; 476

&lt;211&gt; 561

&lt;212&gt; DNA

<213> *Chlamydia pneumoniae*

&lt;400&gt; 476

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&lt;210&gt; 477

&lt;211&gt; 3135

&lt;212&gt; DNA

<213> *Chlamydia pneumoniae*

&lt;400&gt; 477

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gaatcttgtc	aataa					3135

&lt;210&gt; 478

&lt;211&gt; 1041

&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 478

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gaacattacc	tcaatggatg	tgcaaacac	tggtctccta	ctgaagttcc	tatggcaaga	180
gatatcgagt	tgtggaaatc	agatgaactg	tctgaagacg	aacgcagggt	cattttgtta	240
aacctaggat	ttttcagtag	cgcggaaagc	ctagtcggaa	ataacatcgt	tcttgctatc	300
ttcaaacata	tcacaaaccc	tgaagcaaga	cagtattttac	tgctgcaagc	ttttgaggaa	360
gccgtacata	cacatacatt	tctctatatt	tgccaatctt	taggacttga	tgaaggcgaa	420
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&lt;210&gt; 479

&lt;211&gt; 984

&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 479

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&lt;210&gt; 480

&lt;211&gt; 444

&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 480

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ttgggaatct	actacgtcgc	gtga				444

&lt;210&gt; 481

&lt;211&gt; 1581

&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 481

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&lt;210&gt; 482

&lt;211&gt; 1908

&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 482

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&lt;210&gt; 483

&lt;211&gt; 945

&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 483

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aacaaagact	atgtcctact	agcctatgca	aaaggactct	ccccacttaa	agtcgttata	660
aaacataattt	taccctacgc	catattccca	accatttctt	attccgcatt	cctaactact	720
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&lt;210&gt; 484

&lt;211&gt; 3723

&lt;212&gt; DNA

<213> *Chlamydia pneumoniae*

&lt;400&gt; 484

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&lt;210&gt; 485

&lt;211&gt; 1731

&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 485

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&lt;210&gt; 486

&lt;211&gt; 4224

&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 486

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&lt;211&gt; 804

&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 487

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&lt;210&gt; 488

&lt;211&gt; 306

&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 488

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&lt;210&gt; 489

&lt;211&gt; 806

&lt;212&gt; DNA

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 489

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tctttttggg	acggaaggaa	ttcaacaaat	tcaacctact	tgaacattat	agaatctatc	600
tacgaaggga	aagtgttatc	tagtaaaagta	cgaagagaca	taacattaag	cagatctctt	660
ttaaaagaaa	catccatagc	taacgcatac	cctaattcta	gagcaagtca	tgacatactg	720
cgtctaacaa	aggagataga	agataaacta	ttcaataaag	aatgtctctg	ccaggaagtg	780
ttgtgagtaa	gttagtcaaa	gaagca				806

&lt;210&gt; 490

&lt;211&gt; 293

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 490

Met Ser Lys His Thr Ser Glu Ser Arg Ile Ala Gln Asp Met Leu Glu

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1           5           10           15
Arg Tyr Ser Gly Ser Ser Val Lys Gln Phe Cys Pro Tyr Leu Leu Leu
20           25           30
Thr Asn Phe Ser Tyr Tyr Ile Gln Thr Phe Ala Lys Leu His Gly Val
35           40           45
Pro Val Phe Glu Gly Ser Met Phe Ser Ala Ala His Ala Pro His Leu
50           55           60
Lys Thr Ser Ile Leu Asp Phe Lys Leu Gly Ser Pro Gly Ala Ala Leu
65           70           75           80
Thr Ile Asp Leu Cys Ser Phe Leu Pro Asp Leu Lys Ala Ala Leu Met
85           90           95
Leu Gly Met Cys Gly Gly Leu Arg Ser His Tyr Gln Val Gly Asp Tyr
100          105          110
Phe Val Pro Val Ala Ser Ile Arg Gly Glu Gly Thr Ser Asp Ala Tyr
115          120          125
Phe Pro Pro Glu Val Pro Ala Leu Ala Asn Phe Val Val Gln Lys Ala
130          135          140
Thr Thr Glu Val Leu Glu Asp Lys Lys Ala Asn Tyr His Ile Gly Ile
145          150          155          160
Thr His Thr Thr Asn Ile Arg Phe Trp Glu Phe Asn Lys Lys Phe Arg
165          170          175
Lys Lys Leu Tyr Glu Thr Lys Ala Gln Ser Ala Glu Met Glu Cys Ala
180          185          190
Thr Leu Phe Ala Ala Gly Tyr Arg Arg Asn Leu Pro Ile Gly Ala Leu
195          200          205
Leu Leu Ile Ser Asp Leu Pro Leu Arg Lys Glu Gly Ile Lys Thr Lys
210          215          220
Ser Ser Gly Asn Phe Ile Phe Asn Thr Tyr Thr Glu Asp His Ile Leu
225          230          235          240
Thr Gly Gln Glu Val Ile Glu Asn Leu Glu Lys Val Met Leu Lys Arg
245          250          255
Ala Ala Ser Asp His Lys Lys Asp Gln Gln Tyr Arg Gly Leu Pro His
260          265          270
Met Glu Val Gly Glu Ala Asp Asp Thr Met Ala Ser Gly Ser Glu Thr
275          280          285
Ser Asp Ser Asp Tyr
290

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&lt;210&gt; 491

&lt;211&gt; 394

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 491

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Met Ser Lys Glu Thr Phe Gln Arg Asn Lys Pro His Ile Asn Ile Gly
1           5           10           15
Thr Ile Gly His Val Asp His Gly Lys Thr Thr Leu Thr Ala Ala Ile
20           25           30
Thr Arg Ala Leu Ser Gly Asp Gly Leu Ala Ser Phe Arg Asp Tyr Ser
35           40           45
Ser Ile Asp Asn Thr Pro Glu Glu Lys Ala Arg Gly Ile Thr Ile Asn
50           55           60
Ala Ser His Val Glu Tyr Glu Thr Pro Asn Arg His Tyr Ala His Val
65           70           75           80
Asp Cys Pro Gly His Ala Asp Tyr Val Lys Asn Met Ile Thr Gly Ala
85           90           95
Ala Gln Met Asp Gly Ala Ile Leu Val Val Ser Ala Thr Asp Gly Ala
100          105          110
Met Pro Gln Thr Lys Glu His Ile Leu Leu Ala Arg Gln Val Gly Val
115          120          125
Pro Tyr Ile Val Val Phe Leu Asn Lys Val Asp Met Ile Ser Gln Glu

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130	135	140
Asp Ala Glu Leu Ile	Asp Leu Val Glu Met	Glu Leu Ser Glu Leu Leu
145	150	155
Glu Glu Lys Gly Tyr	Lys Gly Cys Pro Ile	Ile Arg Gly Ser Ala Leu
165	170	175
Lys Ala Leu Glu Gly	Asp Ala Asn Tyr Ile	Glu Lys Val Arg Glu Leu
180	185	190
Met Gln Ala Val Asp	Asp Asn Ile Pro Thr	Pro Glu Arg Glu Ile Asp
195	200	205
Lys Pro Phe Leu Met	Pro Ile Glu Asp Val	Phe Ser Ile Ser Gly Arg
210	215	220
Gly Thr Val Val Thr	Gly Arg Ile Glu Arg	Gly Ile Val Lys Val Ser
225	230	235
Asp Lys Val Gln Leu	Val Gly Leu Gly Glu	Thr Lys Glu Thr Ile Val
245	250	255
Thr Gly Val Glu Met	Phe Arg Lys Glu Leu	Pro Glu Gly Arg Ala Gly
260	265	270
Glu Asn Val Gly Leu	Leu Leu Arg Gly Ile	Gly Lys Asn Asp Val Glu
275	280	285
Arg Gly Met Val Val	Cys Gln Pro Asn Ser	Val Lys Pro His Thr Lys
290	295	300
Phe Lys Ser Ala Val	Tyr Val Leu Gln Lys	Glu Glu Gly Gly Arg His
305	310	315
Lys Pro Phe Phe Ser	Gly Tyr Arg Pro Gln	Phe Phe Phe Arg Thr Thr
325	330	335
Asp Val Thr Gly Val	Val Thr Leu Pro Glu	Gly Thr Glu Met Val Met
340	345	350
Pro Gly Asp Asn Val	Glu Leu Asp Val Glu	Leu Ile Gly Thr Val Ala
355	360	365
Leu Glu Glu Gly Met	Arg Phe Ala Ile Arg	Glu Gly Gly Arg Thr Ile
370	375	380
Gly Ala Gly Thr Ile	Ser Lys Ile Asn Ala	
385	390	

&lt;210&gt; 492

&lt;211&gt; 560

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;220&gt;

&lt;221&gt; VARIANT

&lt;222&gt; 553,554,555,556,558,559,560

&lt;223&gt; Xaa = Any Amino Acid

&lt;400&gt; 492

Met Pro Gln Lys Val	Leu Ile Thr Ser	Ala Leu Pro Tyr	Ala Asn Gly
1	5	10	15
Pro Leu His Phe Gly	His Ile Ala Gly	Val Tyr Leu Pro	Ala Asp Val
20	25	30	
Tyr Ala Arg Phe Arg	Arg Leu Leu Gly	Asp Asp Val Leu	Tyr Ile Cys
35	40	45	
Gly Ser Asp Glu Phe	Gly Ile Ala Ile	Thr Leu Asn Ala	Asp Arg Glu
50	55	60	
Gly Leu Gly Tyr Gln	Glu Tyr Val Asp	Met Tyr His Lys	Leu His Lys
65	70	75	80
Asp Thr Phe Glu Lys	Leu Gly Phe Ala	Leu Asp Phe Phe	Ser Arg Thr
85	90	95	
Thr Asn Pro Phe His	Ala Glu Leu Val	Gln Asp Phe Tyr	Ser Gln Leu
100	105	110	
Lys Ala Ser Gly Leu	Ile Glu Asn Arg	Ile Ser Glu Gln	Leu Tyr Ser
115	120	125	

Glu	Gln	Glu	Gln	Arg	Phe	Leu	Ala	Asp	Arg	Tyr	Val	Glu	Gly	Thr	Cys
130						135					140				
Pro	Arg	Cys	Gly	Phe	Asp	His	Ala	Arg	Gly	Asp	Glu	Cys	Gln	Ser	Cys
145					150					155					160
Gly	Ala	Asp	Tyr	Glu	Ala	Ile	Asp	Leu	Ile	Gly	Pro	Lys	Ser	Lys	Ile
				165					170					175	
Ser	Gly	Val	Glu	Leu	Val	Lys	Lys	Glu	Thr	Glu	His	Ser	Tyr	Phe	Leu
			180					185					190		
Leu	Asp	Arg	Met	Lys	Asp	Ala	Leu	Leu	Ser	Phe	Ile	Gln	Gly	Cys	Tyr
	195					200						205			
Leu	Pro	Asp	His	Val	Arg	Lys	Phe	Val	Val	Asp	Tyr	Ile	Glu	His	Val
	210					215					220				
Arg	Ser	Arg	Ala	Ile	Thr	Arg	Asp	Leu	Ser	Trp	Gly	Ile	Pro	Val	Pro
225				230						235					240
Asp	Phe	Pro	Gly	Lys	Val	Phe	Tyr	Val	Trp	Phe	Asp	Ala	Pro	Ile	Gly
			245						250					255	
Tyr	Ile	Ser	Gly	Thr	Met	Glu	Trp	Ala	Ala	Ser	Gln	Gly	Asn	Pro	Asp
			260					265					270		
Glu	Trp	Lys	Arg	Phe	Trp	Leu	Glu	Asp	Gly	Val	Glu	Tyr	Val	Gln	Phe
	275						280					285			
Ile	Gly	Lys	Asp	Asn	Leu	Pro	Phe	His	Ser	Val	Val	Phe	Pro	Ala	Met
	290				295						300				
Glu	Leu	Gly	Gln	Lys	Leu	Asp	Tyr	Lys	Lys	Val	Asp	Ala	Leu	Val	Val
305				310						315					320
Ser	Glu	Phe	Tyr	Leu	Glu	Gly	Arg	Gln	Phe	Ser	Lys	Ser	Glu	Gly	
			325					330					335		
Asn	Tyr	Val	Asp	Met	Asp	Lys	Phe	Leu	Ser	Ser	Tyr	Ser	Leu	Asp	Lys
		340						345					350		
Leu	Arg	Tyr	Val	Leu	Ala	Ala	Thr	Ala	Pro	Glu	Thr	Ser	Asp	Ser	Glu
	355						360					365			
Phe	Thr	Phe	Leu	Asp	Phe	Lys	Thr	Arg	Cys	Asn	Ser	Glu	Leu	Val	Gly
	370					375					380				
Lys	Phe	Gly	Asn	Phe	Ile	Asn	Arg	Val	Leu	Ala	Phe	Ala	Glu	Lys	Asn
385				390						395					400
His	Tyr	Asp	Lys	Leu	Ser	Tyr	His	Ser	Val	Val	Leu	Glu	Asp	Ser	Asp
			405						410				415		
Arg	Ala	Phe	Leu	Glu	Glu	Ala	Arg	Gln	Leu	Val	Arg	Asp	Ala	Glu	Lys
			420					425					430		
Cys	Tyr	Arg	Glu	Tyr	Ser	Leu	Arg	Lys	Ala	Thr	Ser	Val	Ile	Met	Ser
	435						440					445			
Leu	Ala	Ala	Leu	Gly	Asn	Val	Tyr	Phe	Asn	Gln	Gln	Ala	Pro	Trp	Lys
	450					455					460				
Leu	Leu	Lys	Glu	Gly	Thr	Arg	Glu	Arg	Val	Glu	Ala	Ile	Leu	Phe	Cys
465				470						475					480
Ala	Cys	Tyr	Cys	Gln	Lys	Leu	Leu	Ala	Leu	Ile	Ser	Tyr	Pro	Ile	Ile
			485						490					495	
Pro	Glu	Ser	Ala	Val	Ala	Ile	Trp	Glu	Met	Ile	Ser	Pro	Lys	Ser	Leu
		500						505					510		
Glu	Asn	Cys	Asn	Leu	Asp	Thr	Met	Tyr	Ala	Arg	Asp	Leu	Trp	Lys	Glu
	515						520					525			
Glu	Ile	Leu	Asp	Val	Ile	Asn	Glu	Glu	Phe	His	Leu	Lys	Ser	Pro	Arg
	530					535					540				
Leu	Leu	Phe	Thr	Thr	Val	Glu	Thr	Xaa	Xaa	Xaa	Xaa	Phe	Xaa	Xaa	Xaa
545					550					555					560

&lt;210&gt; 493

&lt;211&gt; 97

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 493

Met Ile Lys Lys Asp Arg Phe Thr Asn Glu Lys Leu Asn Lys Leu Phe  
 1 5 10 15  
 Asp Ser Pro Phe Ser Leu Val Asn Tyr Ala Ile Lys Gln Ala Lys Ile  
 20 25 30  
 Lys Ile Ala Lys Gly Asp Val Arg Ser Ser Asn Val Ala Ile Glu Thr  
 35 40 45  
 Leu Val Leu Leu Asp Arg Glu Gly Ile Gln Pro Glu Phe Thr Glu Glu  
 50 55 60  
 Ile Val Val Thr Ala Ser Pro Thr Val Glu Arg Lys Arg Ser Glu His  
 65 70 75 80  
 Thr Asn Ser Arg Lys Lys Asp Pro Ser Ala Tyr Thr Trp Ser Asp Val  
 85 90 95  
 Lys

&lt;210&gt; 494

&lt;211&gt; 205

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 494

Met Asn Lys Ile Leu Val Asp Ser Pro Phe Ser Pro Asp His Gln Lys  
 1 5 10 15  
 Cys Cys Pro Lys Leu Phe Thr Ile Ser Ala Pro Ala Gly Val Gly Lys  
 20 25 30  
 Thr Thr Leu Val Arg Met Leu Glu Gln Glu Phe Ser Ser Ala Phe Ala  
 35 40 45  
 Glu Thr Ile Ser Val Thr Thr Arg Lys Pro Arg Glu Gly Glu Val Pro  
 50 55 60  
 Gly Lys Asp Tyr His Phe Val Ser His Glu Glu Phe Gln Arg Leu Leu  
 65 70 75 80  
 Asp Arg Gln Ala Leu Leu Glu Trp Val Phe Leu Phe Gly Glu Cys Tyr  
 85 90 95  
 Gly Thr Ser Met Leu Glu Ile Glu Arg Ile Trp Ser Leu Gly Lys His  
 100 105 110  
 Ala Val Ala Val Ile Asp Ile Gln Gly Ala Leu Phe Ile Arg Ser Arg  
 115 120 125  
 Met Pro Ser Val Ser Ile Phe Ile Ala Pro Pro Ser Gln Glu Glu Leu  
 130 135 140  
 Glu Arg Arg Leu Ala Ser Arg Gly Ser Glu Glu Gly Ser Gln Arg Lys  
 145 150 155 160  
 Glu Arg Leu Glu His Ser Leu Ile Glu Leu Ala Ala Ala Asn Gln Phe  
 165 170 175  
 Asp Tyr Val Ile Ile Asn Asp Asp Leu Asn Gln Ala Tyr Arg Val Leu  
 180 185 190  
 Lys Ser Ile Phe Ile Ala Glu Glu His Arg Asn Ile Leu  
 195 200 205

&lt;210&gt; 495

&lt;211&gt; 602

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 495

Met Lys Glu Tyr Lys Ile Glu Asn Ile Arg Asn Phe Ser Ile Ile Ala  
 1 5 10 15  
 His Ile Asp His Gly Lys Ser Thr Ile Ala Asp Arg Leu Leu Glu Ser  
 20 25 30  
 Thr Ser Thr Val Glu Glu Arg Glu Met Arg Glu Gln Leu Leu Asp Ser  
 35 40 45  
 Met Asp Leu Glu Arg Glu Arg Gly Ile Thr Ile Lys Ala His Pro Val

50	55	60
Thr Met Thr Tyr Leu Tyr Glu Gly Glu Val Tyr Gln Leu Asn Leu Ile		
65	70	75
Asp Thr Pro Gly His Val Asp Phe Ser Tyr Glu Val Ser Arg Ser Leu		
85	90	95
Ser Ala Cys Glu Gly Ala Leu Leu Ile Val Asp Ala Ala Gln Gly Val		
100	105	110
Gln Ala Gln Ser Leu Ala Asn Val Tyr Leu Ala Leu Glu Arg Asp Leu		
115	120	125
Glu Ile Ile Pro Val Leu Asn Lys Ile Asp Leu Pro Ala Ala Asp Pro		
130	135	140
Val Arg Ile Ala Gln Gln Ile Glu Asp Tyr Ile Gly Leu Asp Thr Thr		
145	150	155
Asn Ile Ile Ala Cys Ser Ala Lys Thr Gly Gln Gly Ile Pro Ala Ile		
165	170	175
Leu Lys Ala Ile Ile Asp Leu Val Pro Pro Pro Lys Ala Pro Ala Glu		
180	185	190
Thr Glu Leu Lys Ala Leu Val Phe Asp Ser His Tyr Asp Pro Tyr Val		
195	200	205
Gly Ile Met Val Tyr Val Arg Ile Ile Ser Gly Glu Leu Lys Lys Gly		
210	215	220
Asp Arg Ile Thr Phe Met Ala Ala Lys Gly Ser Ser Phe Glu Val Leu		
225	230	235
Gly Ile Gly Ala Phe Leu Pro Lys Ala Thr Phe Ile Glu Gly Ser Leu		
245	250	255
Arg Pro Gly Gln Val Gly Phe Phe Ile Ala Asn Leu Lys Lys Val Lys		
260	265	270
Asp Val Lys Ile Gly Asp Thr Val Thr Lys Thr Lys His Pro Ala Lys		
275	280	285
Thr Pro Leu Glu Gly Phe Lys Glu Ile Asn Pro Val Val Phe Ala Gly		
290	295	300
Ile Tyr Pro Ile Asp Ser Ser Asp Phe Asp Thr Leu Lys Asp Ala Leu		
305	310	315
Gly Arg Leu Gln Leu Asn Asp Ser Ala Leu Thr Ile Glu Gln Glu Ser		
325	330	335
Ser His Ser Leu Gly Phe Gly Phe Arg Cys Gly Phe Leu Gly Leu Leu		
340	345	350
His Leu Glu Ile Ile Phe Glu Arg Ile Ile Arg Glu Phe Asp Leu Asp		
355	360	365
Ile Ile Ala Thr Ala Pro Ser Val Ile Tyr Lys Val Val Leu Lys Asn		
370	375	380
Gly Lys Val Leu Asp Ile Asp Asn Pro Ser Gly Tyr Pro Asp Pro Ala		
385	390	395
Ile Ile Glu His Val Glu Glu Pro Trp Val His Val Asn Ile Ile Thr		
405	410	415
Pro Gln Glu Tyr Leu Ser Asn Ile Met Asn Leu Cys Leu Asp Lys Arg		
420	425	430
Gly Ile Cys Val Lys Thr Glu Met Leu Asp Gln His Arg Leu Val Leu		
435	440	445
Ala Tyr Glu Leu Pro Leu Asn Glu Ile Val Ser Asp Phe Asn Asp Lys		
450	455	460
Leu Lys Ser Val Thr Lys Gly Tyr Gly Ser Phe Asp Tyr Arg Leu Gly		
465	470	475
Asp Tyr Arg Lys Gly Ser Ile Ile Lys Leu Glu Val Leu Ile Asn Glu		
485	490	495
Glu Pro Ile Asp Ala Phe Ser Cys Leu Val His Arg Asp Lys Ala Glu		
500	505	510
Ser Arg Gly Arg Ser Ile Cys Glu Lys Leu Val Asp Val Ile Pro Gln		
515	520	525
Gln Leu Phe Lys Ile Pro Ile Gln Ala Ala Ile Asn Lys Lys Val Ile		
530	535	540

Ala Arg Glu Thr Ile Arg Ala Leu Ser Lys Asn Val Thr Ala Lys Cys  
 545 550 555 560  
 Tyr Gly Gly Asp Ile Thr Arg Lys Arg Lys Leu Trp Glu Lys Gln Lys  
 565 570 575  
 Lys Gly Lys Lys Arg Met Lys Glu Phe Gly Lys Val Ser Ile Pro Asn  
 580 585 590  
 Thr Ala Phe Ile Glu Val Leu Lys Leu Asp  
 595 600

&lt;210&gt; 496

&lt;211&gt; 324

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 496

Met Glu Leu Leu Pro His Glu Lys Gln Val Val Glu Tyr Glu Lys Ala  
 1 5 10 15  
 Ile Ala Glu Phe Lys Glu Lys Asn Lys Asn Ser Leu Leu Ser Ser  
 20 25 30  
 Ser Glu Ile Gln Lys Leu Glu Lys Arg Leu Asp Lys Leu Lys Glu Lys  
 35 40 45  
 Ile Tyr Ser Asp Leu Thr Pro Trp Glu Arg Val Gln Ile Cys Arg His  
 50 55 60  
 Pro Ser Arg Pro Arg Thr Val Asn Tyr Ile Glu Gly Met Cys Glu Glu  
 65 70 75 80  
 Phe Val Glu Leu Cys Gly Asp Arg Thr Phe Arg Asp Asp Pro Ala Val  
 85 90 95  
 Val Gly Gly Phe Val Lys Ile Gln Gly Gln Arg Phe Val Leu Ile Gly  
 100 105 110  
 Gln Glu Lys Gly Cys Asp Thr Ala Ser Arg Leu His Arg Asn Phe Gly  
 115 120 125  
 Met Leu Cys Pro Glu Gly Phe Arg Lys Ala Leu Arg Leu Gly Lys Leu  
 130 135 140  
 Ala Glu Lys Phe Gly Leu Pro Val Val Phe Leu Val Asp Thr Pro Gly  
 145 150 155 160  
 Ala Tyr Pro Gly Leu Thr Ala Glu Glu Arg Gly Gln Gly Trp Ala Ile  
 165 170 175  
 Ala Lys Asn Leu Phe Glu Leu Ser Arg Leu Ala Thr Pro Val Ile Ile  
 180 185 190  
 Val Val Ile Gly Glu Gly Cys Ser Gly Gly Ala Leu Gly Met Ala Val  
 195 200 205  
 Gly Asp Ser Val Ala Met Leu Glu His Ser Tyr Tyr Ser Val Ile Ser  
 210 215 220  
 Pro Glu Gly Cys Ala Ser Ile Leu Trp Lys Asp Pro Lys Lys Asn Ser  
 225 230 235 240  
 Glu Ala Ala Ser Met Leu Lys Met His Gly Glu Asn Leu Lys Gln Phe  
 245 250 255  
 Gly Ile Ile Asp Thr Val Ile Lys Glu Pro Ile Gly Gly Ala His His  
 260 265 270  
 Asp Pro Ala Leu Val Tyr Ser Asn Val Arg Glu Phe Ile Ile Gln Glu  
 275 280 285  
 Trp Leu Arg Leu Lys Asp Leu Ala Ile Glu Glu Leu Leu Glu Lys Arg  
 290 295 300  
 Tyr Glu Lys Phe Arg Ser Ile Gly Leu Tyr Glu Thr Thr Ser Glu Ser  
 305 310 315 320  
 Gly Pro Glu Ala

&lt;210&gt; 497

&lt;211&gt; 659

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 497

Met	Lys	Leu	Leu	Leu	Lys	Ala	Val	Leu	Arg	His	Lys	Asn	His	Leu	Val	1	5	10	15
Ile	Leu	Gly	Cys	Ser	Leu	Leu	Ala	Ile	Leu	Gly	Leu	Thr	Phe	Ser	Ser	20	25	30	
Gln	Met	Glu	Ile	Phe	Ser	Leu	Gly	Met	Ile	Ala	Lys	Thr	Gly	Pro	Asp	35	40	45	
Ala	Phe	Leu	Leu	Phe	Gly	Arg	Lys	Glu	Ser	Gly	Lys	Leu	Val	Lys	Val	50	55	60	
Ser	Glu	Leu	Ser	Gln	Lys	Asp	Ile	Leu	Glu	Asn	Trp	Gln	Ala	Ile	Ser	65	70	75	80
Lys	Asp	Ser	Glu	Thr	Leu	Thr	Val	Ser	Asp	Ala	Thr	Thr	Tyr	Ile	Ala	85	90	95	
Glu	His	Gly	Lys	Ser	Thr	Ala	Ser	Leu	Thr	Ser	Lys	Leu	Ser	Lys	Phe	100	105	110	
Val	Arg	Asn	Tyr	Ile	Asp	Val	Ser	Arg	Phe	Arg	Gly	Leu	Ala	Ile	Phe	115	120	125	
Leu	Ile	Cys	Val	Ala	Ile	Phe	Lys	Ala	Val	Thr	Leu	Phe	Phe	Gln	Arg	130	135	140	
Phe	Leu	Gly	Gln	Val	Val	Ala	Ile	Arg	Val	Ser	Arg	Asp	Leu	Arg	Gln	145	150	155	160
Asp	Tyr	Phe	Lys	Ala	Leu	Gln	Gln	Leu	Pro	Met	Thr	Phe	Phe	His	Asp	165	170	175	
His	Asp	Ile	Gly	Asn	Leu	Ser	Asn	Arg	Val	Met	Thr	Asp	Ser	Ala	Ser	180	185	190	
Ile	Ala	Leu	Ala	Val	Asn	Ser	Leu	Met	Ile	Asn	Tyr	Ile	Gln	Ala	Pro	195	200	205	
Ile	Thr	Phe	Ile	Leu	Thr	Leu	Gly	Val	Cys	Leu	Ser	Ile	Ser	Trp	Lys	210	215	220	
Phe	Ser	Ile	Leu	Ile	Cys	Val	Ala	Phe	Pro	Ile	Phe	Ile	Leu	Pro	Ile	225	230	235	240
Val	Val	Ile	Ala	Arg	Lys	Ile	Lys	Asn	Leu	Ala	Lys	Arg	Ile	Gln	Lys	245	250	255	
Ser	Gln	Asp	Ser	Phe	Ser	Ser	Val	Leu	Tyr	Asp	Phe	Leu	Ala	Gly	Val	260	265	270	
Met	Thr	Val	Lys	Val	Phe	Arg	Thr	Glu	Lys	Phe	Ala	Phe	Thr	Lys	Tyr	275	280	285	
Cys	Glu	His	Asn	Asn	Lys	Ile	Ser	Ala	Leu	Glu	Glu	Lys	Ser	Ala	Ala	290	295	300	
Tyr	Gly	Leu	Leu	Pro	Arg	Pro	Leu	Leu	His	Thr	Ile	Ala	Ser	Leu	Phe	305	310	315	320
Phe	Ala	Phe	Val	Val	Val	Ile	Gly	Ile	Tyr	Lys	Phe	Ala	Ile	Pro	Pro	325	330	335	
Glu	Glu	Leu	Ile	Val	Phe	Cys	Gly	Leu	Leu	Tyr	Leu	Ile	Tyr	Asp	Pro	340	345	350	
Ile	Lys	Lys	Phe	Gly	Asp	Glu	Asn	Thr	Ser	Ile	Met	Arg	Gly	Cys	Ala	355	360	365	
Ala	Ala	Glu	Arg	Phe	Tyr	Glu	Val	Leu	Asn	His	Pro	Asp	Leu	His	Ser	370	375	380	
Gln	Lys	Glu	Arg	Glu	Ile	Glu	Phe	Leu	Gly	Leu	Ser	Asn	Thr	Ile	Thr	385	390	395	400
Phe	Glu	Asn	Val	Ser	Phe	Gly	Tyr	Gln	Glu	Asp	Lys	His	Ile	Leu	Lys	405	410	415	
Asn	Leu	Ser	Phe	Thr	Leu	His	Lys	Gly	Glu	Ala	Leu	Gly	Ile	Val	Gly	420	425	430	
Pro	Thr	Gly	Ser	Gly	Lys	Thr	Thr	Leu	Val	Lys	Leu	Leu	Pro	Arg	Leu	435	440	445	
Tyr	Glu	Val	Ser	Gln	Gly	Lys	Ile	Leu	Ile	Asp	Ser	Leu	Pro	Ile	Thr	450	455	460	

Glu Tyr Asn Lys Gly Ser Leu Arg Asn His Ile Ala Cys Val Leu Gln  
 465 470 475 480  
 Asn Pro Phe Leu Phe Tyr Asp Thr Val Trp Asn Asn Leu Thr Cys Gly  
 485 490 495  
 Lys Asp Met Glu Glu Glu Ala Val Leu Glu Ala Leu Lys Arg Ala Tyr  
 500 505 510  
 Ala Asp Glu Phe Ile Leu Lys Leu Pro Lys Gly Val His Ser Val Leu  
 515 520 525  
 Glu Glu Ser Gly Lys Asn Leu Ser Gly Gly Gln Gln Gln Arg Leu Ala  
 530 535 540  
 Ile Ala Arg Ala Leu Leu Lys Asn Ala Ser Ile Leu Ile Leu Asp Glu  
 545 550 555 560  
 Ala Thr Ser Ala Leu Asp Ala Ile Ser Glu Asn Tyr Ile Lys Asn Ile  
 565 570 575  
 Ile Gly Glu Leu Lys Gly Gln Cys Thr Gln Ile Ile Ile Ala His Lys  
 580 585 590  
 Leu Thr Thr Leu Glu His Val Asp Arg Val Leu Tyr Ile Glu Asn Gly  
 595 600 605  
 Gln Lys Ile Ala Glu Gly Thr Lys Glu Glu Leu Leu Gln Thr Cys Pro  
 610 615 620  
 Glu Phe Leu Lys Met Trp Glu Leu Ser Gly Thr Lys Glu Tyr Asn Arg  
 625 630 635 640  
 Val Phe Val Pro Asp His Lys Leu Val Ala Asn Pro Thr Asp Met Ala  
 645 650 655  
 Ile Thr Thr

&lt;210&gt; 498

&lt;211&gt; 411

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 498

Met Ile Pro Thr Met Leu Met Phe Phe Ile Ile Cys Phe Thr Leu Cys  
 1 5 10 15  
 Ser Gly Phe Ile Ser Leu Ser Gln Ile Ala Leu Phe Ser Leu Pro Thr  
 20 25 30  
 Ser Leu Ile Ser His Tyr Lys Arg Ser Lys Ser Lys Lys Gln Gln Arg  
 35 40 45  
 Val Ala Thr Leu Leu Leu His Pro His His Leu Leu Ile Thr Leu Ile  
 50 55 60  
 Phe Cys Asp Ile Gly Leu Asn Ile Ala Ile Gln Asn Cys Phe Ala Ile  
 65 70 75 80  
 Leu Phe Gly Asp Ala Ala Ser Trp Trp Phe Thr Val Gly Leu Pro Leu  
 85 90 95  
 Ala Ile Thr Leu Ile Leu Gly Glu Ile Leu Pro Lys Ala Val Ala Leu  
 100 105 110  
 Pro Phe Asn Thr Gln Ile Ala Ser Val Ala Pro Leu Ile Leu Cys  
 115 120 125  
 Val Thr Lys Ile Phe Lys Pro Leu Leu His Trp Gly Ile Val Gly Ile  
 130 135 140  
 Asn Tyr Val Val Gln Trp Ile Leu Ser Lys Gln Gln Ile Asp Ile Ile  
 145 150 155 160  
 Gln Pro Gln Glu Leu Lys Glu Val Leu Gln Ser Cys Lys Asp Phe Gly  
 165 170 175  
 Val Val Asn Gln Glu Glu Ser Arg Leu Leu Tyr Gly Tyr Leu Ser Leu  
 180 185 190  
 Ser Asp Cys Ser Val Lys Glu Arg Met Gln Pro Arg Gln Asp Ile Leu  
 195 200 205  
 Phe Tyr Asp Ile Gln Thr Pro Leu Glu Asn Leu Tyr Leu Leu Phe Ser  
 210 215 220

Lys Gln His Cys Ser Arg Val Pro Ile Cys Asn Asp Asn Leu Gln Asn  
 225 230 235 240  
 Leu Leu Gly Ile Cys Thr Ala Arg Ser Leu Leu Leu His Asp Lys Pro  
 245 250 255  
 Leu Gln Ser Ser Asp Asp Leu Leu Pro Leu Leu Lys Lys Pro Tyr Tyr  
 260 265 270  
 Met Pro Glu Thr Ile Ser Ala Lys Met Ala Leu Cys Gln Met Ala Ala  
 275 280 285  
 Glu Asp Glu Thr Leu Gly Met Ile Ile Asp Glu Tyr Gly Ser Ile Glu  
 290 295 300  
 Gly Leu Ile Thr Gln Glu Asp Leu Phe Glu Ile Val Ala Gly Glu Ile  
 305 310 315 320  
 Val Asp Gln Arg Asp Asn Lys Ile Leu Tyr Thr Thr Ser Gly Ala Asp  
 325 330 335  
 Val Ile Ile Ala Ser Gly Thr Leu Glu Leu Arg Glu Phe Ser Glu Ile  
 340 345 350  
 Phe Asp Ile Asn Leu Pro Thr Asn Asn Asn Ile Ala Thr Ile Gly Gly  
 355 360 365  
 Trp Leu Ile Glu Gln Ile Gly Thr Ile Pro Thr Thr Gly Met Lys Leu  
 370 375 380  
 Ser Trp Asn Asn Leu Leu Phe Gln Val Leu Asp Ala Ala Pro Asn Arg  
 385 390 395 400  
 Ile Arg Arg Val Tyr Ile Arg Lys Leu Tyr Asp  
 405 410

&lt;210&gt; 499

&lt;211&gt; 404

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 499

Met Thr Asn Ser Ala Leu Phe Trp Ile Gly Val Asn Ile Ile Cys Ile  
 1 5 10 15  
 Val Leu Gln Gly Phe Tyr Ser Met Met Glu Met Ala Cys Val Ser Phe  
 20 25 30  
 Asn Arg Val Arg Leu Gln Tyr Tyr Leu Thr Lys Asp His Lys Lys Ala  
 35 40 45  
 Arg Tyr Ile Asn Phe Leu Ile Arg Arg Pro Tyr Arg Leu Phe Gly Thr  
 50 55 60  
 Val Met Leu Gly Val Asn Ile Ala Leu Gln Val Gly Ser Glu Ser Ser  
 65 70 75 80  
 Arg Asn Cys Tyr Arg Ala Leu Gly Ile Thr Pro Asp Tyr Ala Pro Phe  
 85 90 95  
 Thr Gln Ile Phe Ile Val Val Ile Phe Ala Glu Leu Leu Pro Leu Thr  
 100 105 110  
 Ile Ser Arg Lys Ile Pro Glu Lys Leu Ala Leu Trp Gly Ala Pro Ile  
 115 120 125  
 Leu Tyr Tyr Ser His Tyr Ile Phe Tyr Pro Leu Ile Gln Leu Ile Gly  
 130 135 140  
 Ser Leu Thr Glu Gly Leu Tyr Tyr Leu Leu Asn Ile Arg Lys Glu Lys  
 145 150 155 160  
 Leu Asn Ser Thr Leu Ser Arg Asp Glu Phe Gln Lys Ala Leu Glu Thr  
 165 170 175  
 His His Glu Glu Gln Asp Phe Asn Thr Ile Ala Thr Asn Ile Phe Ser  
 180 185 190  
 Leu Ser Ala Thr Cys Ala Asp Gln Val Cys Gln Pro Leu Glu Gln Val  
 195 200 205  
 Thr Met Leu Pro Ser Ser Ala Asn Val Lys Asp Phe Cys Arg Thr Ile  
 210 215 220  
 Lys Asn Thr Asp Ile Asn Phe Ile Pro Val Tyr His Lys Ala Arg Lys  
 225 230 235 240



<213> Chlamydia pneumoniae

Met 1	Phe	Gly	Ser	Glu 5	Ser	Leu	Arg	Tyr	Gln 10	Leu	Leu	Ile	Gln	Asp 15	Phe
Ala	Lys	Val	Ser	Glu	Glu	Gly	Ile	Gly 25	Leu	Leu	Glu	Ser	Lys 30	Glu	Tyr
Ser	Leu	Leu	Gln	Ala	Lys	Leu	Val	Leu	Arg	Ala	Leu	Ala	Gln	Asn	Ser
Ser	Phe	Asp	Asp	Trp	Phe	Arg	Ser	Phe	Lys	Lys	Cys 60	Gln	Ile	Ser	Tyr
Pro 65	Glu	Leu	Ala	His	Asp 70	Arg	Asp	Val	Leu	Glu	Glu	Phe	Gly	Ile	Gln 80
Val	Leu	Arg	Glu	Gly 85	Ile	Glu	Asn	Pro	Ser	Val	Thr	Val	Arg	Ala	Val
Ser	Val	Leu	Ala	Ile	Gly	Leu	Ala	Arg	Asp	Phe	Arg	Leu	Val	Pro	Leu
Leu	Leu	Gln	Ser	Cys	Asn	Asp	Asp	Ser	Ala	Ile	Val	Arg	Ser	Leu	Ala
Leu	Gln	Val	Ala	Val	Asn	Tyr	Gly	Ser	Glu	Ser	Leu	Lys	Lys	Ala	Ile
Val 145	Glu	Leu	Ala	Arg	Asn 150	Asp	Asp	Ser	Ile	His 155	Val	Arg	Ile	Thr	Ala 160
Tyr	Gln	Val	Val	Ala	Leu	Leu	Gln	Ile	Glu	Glu	Leu	Leu	Pro	Phe	Leu
Arg	Glu	Arg	Ala	Glu	Asn	Lys	Leu	Val	Asp	Ser	Val	Glu	Arg	Arg	Glu
Ala	Trp	Lys	Ala	Cys	Leu	Glu	Leu	Ser	Ser	Gln	Phe	Leu	Glu	Thr	Gly
Val	Ala	Lys	Asp	Asp	Ile	Asp	Gln	Ala	Leu	Phe	Thr	Cys	Glu	Val	Leu
Arg 225	Asn	Gly	Met	Leu	Pro 230	Glu	Thr	Thr	Glu	Ile	Phe	Thr	Glu	Leu	Leu
Ser	Val	Glu	His	Pro	Glu	Val	Gln	Glu	Ser	Leu	Leu	Leu	Ser	Ala	Leu

Ala	Trp	Ser	His 260	Gln	Leu	Gln	Asn	His 265	Lys	Glu	Phe	Leu	Ser	Lys	Val
Arg	His	Val	Met	Cys	Thr	Ser	Pro	Phe	Ala	Lys	Val	Arg	Phe	Gln	Ala
		275					280					285			
Ala	Ala	Leu	Leu	His	Leu	His	Gly	Asp	Pro	Leu	Gly	Arg	Asp	Ser	Leu
		290				295					300				
Val	Glu	Gly	Leu	Arg	Ser	Pro	Gln	Pro	Leu	Val	Cys	Glu	Ala	Ala	Ser
305					310					315					320
Ala	Ala	Leu	Cys	Ser	Leu	Gly	Ile	His	Gly	Val	Pro	Leu	Ala	Lys	Glu
				325					330					335	
His	Leu	Glu	Ser	Leu	Ser	Ser	Arg	Lys	Ala	Ala	Ala	Asn	Leu	Ser	Ile
			340					345					350		
Leu	Leu	Leu	Val	Ser	Arg	Glu	Asp	Ile	Glu	Arg	Ala	Gly	Asp	Val	Ile
		355					360					365			
Ala	Arg	Tyr	Leu	Ser	Asn	Pro	Glu	Met	Cys	Trp	Ala	Ile	Glu	Tyr	Phe
		370				375					380				
Leu	Trp	Asp	Ala	Gln	Trp	Asn	Leu	Arg	Gly	Asp	Thr	Phe	Pro	Leu	Tyr
385					390					395					400
Ser	Asp	Met	Ile	Lys	Arg	Glu	Ile	Gly	Arg	Lys	Leu	Ile	Arg	Leu	Leu
				405					410					415	
Ala	Val	Ala	Arg	Tyr	Ser	Gln	Ala	Lys	Ala	Val	Thr	Ala	Thr	Phe	Leu
			420					425					430		
Ser	Gly	Gln	Gln	Ala	Gln	Gly	Trp	Ser	Phe	Phe	Ser	Gly	Met	Phe	Trp
		435					440					445			
Glu	Glu	Gly	Asp	Val	Lys	Thr	Ser	Glu	Asp	Leu	Val	Thr	Asp	Ala	Cys
		450				455					460				
Phe	Ala	Ala	Lys	Leu	Glu	Gly	Ala	Leu	Ala	Ser	Leu	Cys	Gln	Lys	Lys
465					470					475					480
Asp	Gln	Ala	Ser	Leu	Gln	Arg	Val	Ser	Gln	Leu	Tyr	Asn	Asp	Ser	Arg
				485					490					495	
Trp	Gln	Asp	Lys	Leu	Ala	Ile	Leu	Glu	Ser	Val	Ala	Phe	Ser	Glu	Asn
			500					505					510		
Leu	Asp	Ala	Val	Pro	Phe	Leu	Leu	Asp	Cys	Cys	His	His	Glu	Ala	Pro
		515					520					525			
Ser	Leu	Arg	Ser	Ala	Ala	Ala	Gly	Ala	Leu	Phe	Ser	Ile	Phe	Lys	
		530				535					540				

<210> 501

<211> 103

&lt;212&gt; PRT

<213> Chlamydia pneumoniae

<400> 501

Met 1	Ser	Phe	Lys	Arg 5	Phe	Leu	Gln	Gln	Ile 10	Pro	Val	Arg	Ile	Cys 15	Leu
Leu	Ile	Ile	Tyr 20	Leu	Tyr	Gln	Trp	Leu 25	Ile	Ser	Pro	Leu	Leu 30	Gly	Ser
Cys	Cys	Arg 35	Phe	Phe	Pro	Ser	Cys 40	Ser	His	Tyr	Ala	Glu 45	Gln	Ala	Leu
Lys	Ser 50	His	Gly	Phe	Leu	Met 55	Gly	Cys	Trp	Leu	Ser 60	Ile	Lys	Arg	Ile
Gly 65	Lys	Cys	Gly	Pro	Trp 70	His	Pro	Gly	Gly	Ile 75	Asp	Met	Val	Pro 80	Lys
Thr	Ala	Leu	Gln	Glu 85	Val	Leu	Glu	Pro	Tyr 90	Gln	Glu	Ile	Asp	Gly 95	Gly
Asp	Ser	Ser	His 100	Phe	Ser	Glu									

<210> 502

<211> 362

<212> PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 502

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Met Ala Phe Lys Arg Lys Thr Arg Trp Leu Trp Gln Val Leu Ile Leu
 1      5      10      15
Ser Val Gly Leu Asn Met Leu Phe Leu Leu Phe Tyr Ser Ala Ile
      20      25      30
Phe Arg Lys Asp Ile Tyr Lys Leu His Leu Phe Ser Gly Pro Leu Ile
      35      40      45
Ala Lys Ser Ser Arg Lys Val Tyr Leu Ser Glu Asp Phe Leu Asn Glu
      50      55      60
Ile Ser Gln Ala Ser Leu Asp Asp Leu Ile Ser Leu Phe Lys Asp Glu
      65      70      75      80
Arg Tyr Met Tyr Gly Arg Pro Ile Lys Leu Trp Ala Leu Ser Val Ala
      85      90      95
Ile Ala Ser His His Ile Asp Ile Thr Pro Val Leu Ser Lys Pro Leu
      100      105      110
Thr Tyr Thr Glu Leu Lys Gly Ser Ser Val Arg Trp Leu Leu Pro Asn
      115      120      125
Ile Asp Leu Lys Asp Phe Pro Val Ile Leu Asp Tyr Leu Arg Cys His
      130      135      140
Lys Tyr Pro Tyr Thr Ser Lys Gly Leu Phe Leu Leu Ile Glu Lys Met
      145      150      155      160
Val Gln Glu Gly Trp Val Asp Glu Asp Cys Leu Tyr His Phe Cys Ser
      165      170      175
Thr Pro Glu Phe Leu Tyr Leu Arg Thr Leu Leu Val Gly Ala Asp Val
      180      185      190
Gln Ala Ser Ser Val Ala Ser Leu Ala Arg Met Val Ile Arg Cys Gly
      195      200      205
Ser Glu Arg Phe Phe His Phe Cys Asn Glu Glu Ser Arg Thr Ser Met
      210      215      220
Ile Ser Ala Thr Gln Arg Gln Lys Val Leu Lys Ser Tyr Leu Asp Cys
      225      230      235      240
Glu Glu Ser Leu Ala Ala Leu Leu Leu Leu Val His Asp Ser Asp Val
      245      250      255
Val Leu His Glu Phe Cys Asp Glu Asp Leu Glu Lys Val Ile Arg Leu
      260      265      270
Met Pro Gln Glu Ser Pro Tyr Ser Gln Asn Phe Phe Ser Arg Leu Gln
      275      280      285
His Ser Pro Arg Arg Glu Leu Ala Cys Met Ser Thr Gln Arg Val Glu
      290      295      300
Ala Pro Arg Val Gln Glu Asp Gln Asp Glu Glu Tyr Val Val Gln Asp
      305      310      315      320
Gly Asp Ser Leu Trp Leu Ile Ala Lys Arg Phe Gly Ile Pro Met Asp
      325      330      335
Lys Ile Ile Gln Lys Asn Gly Leu Asn His His Arg Leu Phe Pro Gly
      340      345      350
Lys Val Leu Lys Leu Pro Ala Lys Gln Ser
      355      360

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&lt;210&gt; 503

&lt;211&gt; 582

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 503

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Met Ser Gly Lys Lys Asp Gly Val Arg Gly Met Ile Phe Val Pro Leu
 1      5      10      15
Ser Ile Leu Val Leu Ile Phe Leu Pro Leu Pro Gln Ile Leu Leu Asp
      20      25      30
Phe Gly Leu Cys Ile Ser Phe Ala Leu Ser Leu Leu Thr Val Cys Trp

```

		35					40				45				
Val	Phe	Thr	Leu	Asn	Ser	Ser	Asn	Ser	Ala	Lys	Leu	Phe	Pro	Pro	Phe
	50					55					60				
Phe	Leu	Tyr	Leu	Cys	Leu	Leu	Arg	Leu	Gly	Leu	Asn	Leu	Ala	Ser	Thr
65				70						75					80
Arg	Trp	Ile	Val	Ser	Ser	Gly	Thr	Ala	Ser	Ser	Leu	Ile	Val	Ser	Leu
				85					90					95	
Gly	Ser	Phe	Phe	Ser	Leu	Gly	Ser	Leu	Trp	Ala	Ala	Thr	Phe	Ala	Cys
			100					105					110		
Leu	Leu	Leu	Phe	Phe	Val	Asn	Phe	Leu	Met	Val	Ser	Lys	Gly	Ser	Glu
		115					120					125			
Arg	Ile	Ala	Glu	Val	Arg	Ser	Arg	Phe	Phe	Leu	Glu	Ala	Leu	Pro	Ala
	130					135					140				
Lys	Gln	Met	Ala	Leu	Asp	Ser	Asp	Leu	Val	Ser	Gly	Arg	Ala	Ser	Tyr
145					150					155					160
Lys	Ala	Val	Lys	Lys	Gln	Lys	Asn	Ala	Leu	Ile	Glu	Glu	Gly	Asp	Phe
				165					170					175	
Phe	Ser	Ala	Met	Glu	Gly	Val	Phe	Arg	Phe	Val	Lys	Gly	Asp	Ala	Ile
			180					185					190		
Ile	Ser	Cys	Ile	Leu	Leu	Leu	Val	Asn	Val	Val	Ser	Val	Thr	Cys	Leu
		195					200					205			
Tyr	Tyr	Thr	Ser	Gly	Tyr	Ala	Leu	Glu	Gln	Met	Trp	Phe	Thr	Val	Leu
	210				215						220				
Gly	Asp	Ala	Leu	Val	Ser	Gln	Val	Pro	Ala	Leu	Leu	Thr	Ser	Cys	Ala
225					230					235					240
Ala	Ala	Thr	Leu	Ile	Ser	Lys	Ile	Asp	Lys	Glu	Glu	Ser	Leu	Leu	Asn
				245					250					255	
Tyr	Leu	Phe	Glu	Tyr	Tyr	Lys	Gln	Leu	Arg	Gln	His	Phe	Arg	Val	Val
			260					265					270		
Ser	Leu	Leu	Ile	Phe	Ser	Leu	Cys	Cys	Ile	Pro	Ser	Ser	Pro	Lys	Phe
		275					280					285			
Pro	Ile	Val	Leu	Leu	Ala	Ser	Leu	Leu	Trp	Leu	Ala	Tyr	Arg	Lys	Glu
	290					295					300				
Glu	Pro	Ala	Ser	Glu	Asp	Ser	Cys	Ile	Glu	Arg	Ala	Phe	Ser	Tyr	Val
305					310					315					320
Glu	Gly	Ala	Cys	Pro	Lys	Glu	Gln	Glu	Ser	Gln	Phe	Tyr	Gln	Val	Tyr
				325					330					335	
Arg	Ala	Ala	Ser	Glu	Glu	Val	Phe	Glu	Asp	Leu	Gly	Val	Arg	Leu	Pro
				340				345					350		
Val	Leu	Thr	Ser	Leu	Arg	Ile	Glu	Glu	Arg	Pro	Trp	Leu	Arg	Val	Phe
		355					360					365			
Gly	Gln	Asn	Val	Tyr	Leu	Asp	Glu	Met	Thr	Pro	Glu	Ala	Val	Leu	Pro
	370					375					380				
Phe	Leu	Arg	Asn	Ile	Ala	His	Glu	Ala	Leu	Asn	Ala	Glu	Val	Val	Gln
385					390					395					400
Lys	Tyr	Leu	Glu	Glu	Ser	Glu	Arg	Val	Phe	Gly	Ile	Ala	Val	Glu	Asp
				405					410					415	
Ile	Val	Pro	Lys	Lys	Ile	Ser	Leu	Ser	Leu	Val	Val	Leu	Ser	Arg	
			420					425					430		
Leu	Leu	Val	Arg	Glu	Arg	Val	Ser	Leu	Lys	Leu	Phe	Pro	Lys	Ile	Leu
		435					440					445			
Glu	Ala	Val	Ala	Val	Tyr	Gln	Asn	Ser	Gly	Asp	Ser	Leu	Glu	Ile	Leu
	450					455					460				
Ala	Glu	Lys	Val	Arg	Lys	Ser	Leu	Gly	Tyr	Trp	Ile	Gly	Arg	Ser	Leu
465					470					475					480
Trp	Asp	Gln	Lys	Gln	Thr	Leu	Glu	Val	Ile	Thr	Ile	Asp	Phe	His	Val
				485					490					495	
Glu	Glu	Leu	Ile	Asn	Ser	Ser	Tyr	Ser	Lys	Ser	Asn	Pro	Val	Met	Gln
			500					505					510		
Glu	Asn	Val	Ile	Arg	Arg	Val	Asp	Ser	Leu	Leu	Glu	Arg	Ser	Val	Phe
		515					520					525			

300

Lys Asp Phe Arg Ala Ile Val Thr Ser Cys Glu Thr Arg Phe Glu Met  
 530 535 540  
 Lys Lys Met Leu Asp Pro His Phe Pro Asp Leu Leu Val Leu Ser His  
 545 550 555 560  
 Asp Glu Leu Pro Lys Glu Ile Pro Ile Ser Phe Leu Gly Ile Val Ser  
 565 570 575  
 Asp Glu Val Leu Val Pro  
 580

&lt;210&gt; 504

&lt;211&gt; 435

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 504

Met Phe Ser Arg Trp Ile Thr Leu Phe Leu Leu Phe Ile Ser Leu Thr  
 1 5 10 15  
 Gly Cys Ser Ser Tyr Ser Ser Lys His Lys Gln Ser Leu Ile Ile Pro  
 20 25 30  
 Ile His Asp Asp Pro Val Ala Phe Ser Pro Glu Gln Ala Lys Arg Ala  
 35 40 45  
 Met Asp Leu Ser Ile Ala Gln Leu Leu Phe Asp Gly Leu Thr Arg Glu  
 50 55 60  
 Thr His Arg Glu Ser Asn Asp Leu Glu Leu Ala Ile Ala Ser Arg Tyr  
 65 70 75 80  
 Thr Val Ser Glu Asp Phe Cys Ser Tyr Thr Phe Phe Ile Lys Asp Ser  
 85 90 95  
 Ala Leu Trp Ser Asp Gly Thr Pro Ile Thr Ser Glu Asp Ile Arg Asn  
 100 105 110  
 Ala Trp Glu Tyr Ala Gln Glu Asn Ser Pro His Ile Gln Ile Phe Gln  
 115 120 125  
 Gly Leu Asn Phe Ser Thr Pro Ser Ser Asn Ala Ile Thr Ile His Leu  
 130 135 140  
 Asp Ser Pro Asn Pro Asp Phe Pro Lys Leu Leu Ala Phe Pro Ala Phe  
 145 150 155 160  
 Ala Ile Phe Lys Pro Glu Asn Pro Lys Leu Phe Ser Gly Pro Tyr Thr  
 165 170 175  
 Leu Val Glu Tyr Phe Pro Gly His Asn Ile His Leu Lys Lys Asn Pro  
 180 185 190  
 Asn Tyr Tyr Asp Tyr His Cys Val Ser Ile Asn Ser Ile Lys Leu Leu  
 195 200 205  
 Ile Ile Pro Asp Ile Tyr Thr Ala Ile His Leu Leu Asn Arg Gly Lys  
 210 215 220  
 Val Asp Trp Val Gly Gln Pro Trp His Gln Gly Ile Pro Trp Glu Leu  
 225 230 235 240  
 His Lys Gln Ser Gln Tyr His Tyr Tyr Thr Tyr Pro Val Glu Gly Ala  
 245 250 255  
 Phe Trp Leu Cys Leu Asn Thr Lys Ser Pro His Leu Asn Asp Leu Gln  
 260 265 270  
 Asn Arg His Arg Leu Ala Thr Cys Ile Asp Lys Arg Ser Ile Ile Glu  
 275 280 285  
 Glu Ala Leu Gln Gly Thr Gln Gln Pro Ala Glu Thr Leu Ser Arg Gly  
 290 295 300  
 Ala Pro Gln Pro Asn Gln Tyr Lys Lys Gln Lys Pro Leu Thr Pro Gln  
 305 310 315 320  
 Glu Lys Leu Val Leu Thr Tyr Pro Ser Asp Ile Leu Arg Cys Gln Arg  
 325 330 335  
 Ile Ala Glu Ile Leu Lys Glu Gln Trp Lys Ala Ala Gly Ile Asp Leu  
 340 345 350  
 Ile Leu Glu Gly Leu Glu Tyr His Leu Phe Val Asn Lys Arg Lys Val  
 355 360 365

Gln Asp Tyr Ala Ile Ala Thr Gln Thr Gly Val Ala Tyr Tyr Pro Gly  
 370 375 380  
 Ala Asn Leu Ile Ser Glu Glu Asp Lys Leu Leu Gln Asn Phe Glu Ile  
 385 390 395 400  
 Ile Pro Ile Tyr Tyr Leu Ser Tyr Asp Tyr Leu Thr Gln Asp Phe Ile  
 405 410 415  
 Glu Gly Val Ile Tyr Asn Ala Ser Gly Ala Val Asp Leu Lys Tyr Thr  
 420 425 430  
 Tyr Phe Pro  
 435

&lt;210&gt; 505

&lt;211&gt; 171

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 505

Met Lys Lys Leu Leu Phe Ser Thr Phe Leu Leu Val Leu Gly Ser Thr  
 1 5 10 15  
 Ser Ala Ala His Ala Asn Leu Gly Tyr Val Asn Leu Lys Arg Cys Leu  
 20 25 30  
 Glu Glu Ser Asp Leu Gly Lys Lys Glu Thr Glu Glu Leu Glu Ala Met  
 35 40 45  
 Lys Gln Gln Phe Val Lys Asn Ala Glu Lys Ile Glu Glu Glu Leu Thr  
 50 55 60  
 Ser Ile Tyr Asn Lys Leu Gln Asp Glu Asp Tyr Met Glu Ser Leu Ser  
 65 70 75 80  
 Asp Ser Ala Ser Glu Glu Leu Arg Lys Lys Phe Glu Asp Leu Ser Gly  
 85 90 95  
 Glu Tyr Asn Ala Tyr Gln Ser Gln Tyr Tyr Gln Ser Ile Asn Gln Ser  
 100 105 110  
 Asn Val Lys Arg Ile Gln Lys Leu Ile Gln Glu Val Lys Ile Ala Ala  
 115 120 125  
 Glu Ser Val Arg Ser Lys Glu Lys Leu Glu Ala Ile Leu Asn Glu Glu  
 130 135 140  
 Ala Val Leu Ala Ile Ala Pro Gly Thr Asp Lys Thr Thr Glu Ile Ile  
 145 150 155 160  
 Ala Ile Leu Asn Glu Ser Phe Lys Lys Gln Asn  
 165 170

&lt;210&gt; 506

&lt;211&gt; 360

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 506

Met Ser Glu Ala Pro Val Tyr Thr Leu Lys Gln Leu Ala Glu Leu Leu  
 1 5 10 15  
 Gln Val Glu Val Gln Gly Asn Ile Glu Thr Pro Ile Ser Gly Val Glu  
 20 25 30  
 Asp Ile Ser Gln Ala Gln Pro His Ile Ala Phe Leu Asp Asn Glu  
 35 40 45  
 Lys Tyr Ser Ser Phe Leu Lys Asn Thr Lys Ala Gly Ala Ile Ile Leu  
 50 55 60  
 Ser Arg Ser Gln Ala Met Gln His Ala His Leu Lys Lys Asn Phe Leu  
 65 70 75 80  
 Ile Thr Asn Glu Ser Pro Ser Leu Thr Phe Gln Lys Cys Ile Glu Leu  
 85 90 95  
 Phe Ile Glu Pro Val Thr Ser Gly Phe Pro Gly Ile His Pro Thr Ala  
 100 105 110  
 Val Ile His Pro Thr Ala Arg Ile Glu Lys Asn Val Thr Ile Glu Pro

		115					120					125			
Tyr	Val	Val	Ile	Ser	Gln	His	Ala	His	Ile	Gly	Ser	Asp	Thr	Tyr	Ile
	130					135					140				
Gly	Ala	Gly	Ser	Val	Ile	Gly	Ala	His	Ser	Val	Leu	Gly	Ala	Asn	Cys
145				150					155					160	
Leu	Ile	His	Pro	Lys	Val	Val	Ile	Arg	Glu	Arg	Val	Leu	Met	Gly	Asn
				165				170						175	
Arg	Val	Val	Val	Gln	Pro	Gly	Ala	Val	Leu	Gly	Ser	Cys	Gly	Phe	Gly
			180				185						190		
Tyr	Ile	Thr	Asn	Ala	Phe	Gly	His	His	Lys	Pro	Leu	Lys	His	Leu	Gly
		195				200					205				
Tyr	Val	Ile	Val	Gly	Asp	Asp	Val	Glu	Ile	Gly	Ala	Asn	Thr	Thr	Ile
	210				215					220					
Asp	Arg	Gly	Arg	Phe	Lys	Asn	Thr	Val	Ile	His	Glu	Gly	Thr	Lys	Ile
225				230					235					240	
Asp	Asn	Gln	Val	Gln	Val	Ala	His	His	Val	Glu	Ile	Gly	Lys	His	Ser
				245				250					255		
Ile	Ile	Val	Ala	Gln	Ala	Gly	Ile	Ala	Gly	Ser	Thr	Lys	Ile	Gly	Glu
		260				265						270			
His	Val	Ile	Ile	Gly	Gly	Gln	Thr	Gly	Ile	Thr	Gly	His	Ile	Ser	Ile
		275				280					285				
Ala	Asp	His	Val	Ile	Met	Ile	Ala	Gln	Thr	Gly	Val	Thr	Lys	Ser	Ile
	290				295					300					
Thr	Ser	Pro	Gly	Ile	Tyr	Gly	Gly	Ala	Pro	Ala	Arg	Pro	Tyr	Gln	Glu
305				310				315						320	
Thr	His	Arg	Leu	Ile	Ala	Lys	Ile	Arg	Asn	Leu	Pro	Lys	Thr	Glu	Glu
			325					330					335		
Arg	Leu	Ser	Lys	Leu	Glu	Lys	Gln	Val	Arg	Asp	Leu	Ser	Thr	Pro	Ser
			340				345				350				
Leu	Ala	Glu	Ile	Pro	Ser	Glu	Ile								
		355				360									

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<210> 507
<211> 399
<212> PRT
<213> Chlamydia pneumoniae
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<400>	507														
Met	Ala	Ala	Ser	Gly	Gly	Thr	Gly	Gly	Leu	Gly	Gly	Thr	Gln	Gly	Val
1				5					10					15	
Asn	Leu	Ala	Ala	Val	Glu	Ala	Ala	Ala	Ala	Lys	Ala	Asp	Ala	Ala	Glu
		20						25					30		
Val	Val	Ala	Ser	Gln	Glu	Gly	Ser	Glu	Met	Asn	Met	Ile	Gln	Gln	Ser
		35					40					45			
Gln	Asp	Leu	Thr	Asn	Pro	Ala	Ala	Ala	Thr	Arg	Thr	Lys	Lys	Lys	Glu
	50					55					60				
Glu	Lys	Phe	Gln	Thr	Leu	Glu	Ser	Arg	Lys	Lys	Gly	Glu	Ala	Gly	Lys
65					70					75					80
Ala	Glu	Lys	Lys	Ser	Glu	Ser	Thr	Glu	Glu	Lys	Pro	Asp	Thr	Asp	Leu
				85					90					95	
Ala	Asp	Lys	Tyr	Ala	Ser	Gly	Asn	Ser	Glu	Ile	Ser	Gly	Gln	Glu	Leu
			100					105					110		
Arg	Gly	Leu	Arg	Asp	Ala	Ile	Gly	Asp	Asp	Ala	Ser	Pro	Glu	Asp	Ile
		115					120					125			
Leu	Ala	Leu	Val	Gln	Glu	Lys	Ile	Lys	Asp	Pro	Ala	Leu	Gln	Ser	Thr
	130					135					140				
Ala	Leu	Asp	Tyr	Leu	Val	Gln	Thr	Thr	Pro	Pro	Ser	Gln	Gly	Lys	Leu
145					150					155					160
Lys	Glu	Ala	Leu	Ile	Gln	Ala	Arg	Asn	Thr	His	Thr	Glu	Gln	Phe	Gly
				165					170					175	
Arg	Thr	Ala	Ile	Gly	Ala	Lys	Asn	Ile	Leu	Phe	Ala	Ser	Gln	Glu	Tyr

Ala	Asp	Gln	180	Asn	Val	Ser	Pro	185	Ser	Gly	Leu	Arg	Ser	190	Leu	Tyr	Leu
		195					200						205				
Glu	Val	Thr	Gly	Asp	Thr	His	Thr	Cys	Asp	Gln	Leu	Leu	Ser	Met	Leu		
	210					215					220						
Gln	Asp	Arg	Tyr	Thr	Tyr	Gln	Asp	Met	Ala	Ile	Val	Ser	Ser	Phe	Leu		
225					230				235						240		
Met	Lys	Gly	Met	Ala	Thr	Glu	Leu	Lys	Arg	Gln	Gly	Pro	Tyr	Val	Pro		
			245						250					255			
Ser	Ala	Gln	Leu	Gln	Val	Leu	Met	Thr	Glu	Thr	Arg	Asn	Leu	Gln	Ala		
		260						265					270				
Val	Leu	Thr	Ser	Tyr	Asp	Tyr	Phe	Glu	Ser	Arg	Val	Pro	Ile	Leu	Leu		
	275						280					285					
Asp	Ser	Leu	Lys	Ala	Glu	Gly	Ile	Gln	Thr	Pro	Ser	Asp	Leu	Asn	Phe		
	290					295				300							
Val	Lys	Val	Ala	Glu	Ser	Tyr	His	Lys	Ile	Ile	Asn	Asp	Lys	Phe	Pro		
305					310					315					320		
Thr	Ala	Ser	Lys	Val	Glu	Arg	Glu	Val	Arg	Asn	Leu	Ile	Gly	Asp	Asp		
			325						330					335			
Val	Asp	Ser	Val	Thr	Gly	Val	Leu	Asn	Leu	Phe	Phe	Ser	Ala	Leu	Arg		
			340					345					350				
Gln	Thr	Ser	Ser	Arg	Leu	Phe	Ser	Ser	Ala	Asp	Lys	Arg	Gln	Gln	Leu		
	355						360					365					
Gly	Ala	Met	Ile	Ala	Asn	Ala	Leu	Asp	Ala	Val	Asn	Ile	Asn	Asn	Glu		
	370				375					380							
Asp	Tyr	Pro	Lys	Ala	Ser	Asp	Phe	Pro	Lys	Pro	Tyr	Pro	Trp	Ser			
385					390					395							

&lt;210&gt; 508

&lt;211&gt; 224

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 508

Met	Thr	Ser	Trp	Ile	Glu	Leu	Leu	Asp	Lys	Gln	Ile	Glu	Asp	Gln	His
1				5					10					15	
Met	Leu	Lys	His	Glu	Phe	Tyr	Gln	Arg	Trp	Ser	Glu	Gly	Lys	Leu	Glu
		20						25					30		
Lys	Gln	Gln	Leu	Gln	Ala	Tyr	Ala	Lys	Asp	Tyr	Tyr	Leu	His	Ile	Lys
	35						40					45			
Ala	Phe	Pro	Cys	Tyr	Leu	Ser	Ala	Leu	His	Ala	Arg	Cys	Asp	Asp	Leu
	50					55					60				
Gln	Ile	Arg	Arg	Gln	Ile	Leu	Glu	Asn	Leu	Met	Asp	Glu	Glu	Ala	Gly
65					70					75					80
Asn	Pro	Asn	His	Ile	Asp	Leu	Trp	Arg	Gln	Phe	Ala	Leu	Ser	Leu	Gly
			85						90					95	
Val	Ser	Glu	Glu	Glu	Leu	Ala	Asn	His	Glu	Phe	Ser	Gln	Ala	Ala	Gln
		100						105					110		
Asp	Met	Val	Ala	Thr	Phe	Arg	Arg	Leu	Cys	Asp	Met	Pro	Gln	Leu	Ala
	115						120					125			
Val	Gly	Leu	Gly	Ala	Leu	Tyr	Thr	Tyr	Glu	Ile	Gln	Ile	Pro	Gln	Val
	130					135					140				
Cys	Val	Glu	Lys	Ile	Arg	Gly	Leu	Lys	Glu	Tyr	Phe	Gly	Val	Ser	Ala
145					150					155					160
Arg	Gly	Tyr	Ala	Tyr	Phe	Thr	Val	His	Gln	Glu	Ala	Asp	Ile	Lys	His
			165						170					175	
Ala	Ser	Glu	Glu	Lys	Glu	Met	Leu	Gln	Thr	Leu	Val	Gly	Arg	Glu	Asn
		180						185					190		
Pro	Asp	Ala	Val	Leu	Gln	Gly	Ser	Gln	Glu	Val	Leu	Asp	Thr	Leu	Trp
	195						200					205			
Asn	Phe	Leu	Ser	Ser	Phe	Ile	Asn	Ser	Thr	Glu	Pro	Cys	Ser	Cys	Lys



210                                      215                                      220

<210> 509  
 <211> 246  
 <212> PRT  
 <213> Chlamydia pneumoniae

<400> 509  
 Met Lys Ile Thr Thr Val Lys Thr Pro Lys Ile Tyr Pro Tyr Asp Asp  
 1                                      5                                      10                                      15  
 Leu Tyr Ser Ile Leu Glu Ser Ser Leu Pro Lys Leu Asn Glu Arg Ser  
                                     20                                      25                                      30  
 Ile Val Val Ile Thr Ser Lys Ile Val Ser Leu Cys Glu Gly Ala Val  
                                     35                                      40                                      45  
 Val Glu Leu Glu Lys Val Ser Lys Asp Glu Leu Ile Lys Gln Glu Ala  
                                     50                                      55                                      60  
 Asp Ala Tyr Val Phe Val Glu Lys Tyr Gly Ile Tyr Leu Thr Lys Lys  
 65                                      70                                      75                                      80  
 Trp Gly Ile Leu Ile Pro Ser Ala Gly Ile Asp Glu Ser Asn Val Glu  
                                     85                                      90                                      95  
 Gly Tyr Phe Val Leu Tyr Pro Arg Asp Phe Leu Leu Ser Val Asn Thr  
                                     100                                      105                                      110  
 Leu Gly Asp Trp Leu Arg Asn Phe Tyr His Leu Glu His Cys Gly Ile  
                                     115                                      120                                      125  
 Ile Ile Ser Asp Ser His Thr Thr Pro Leu Arg Arg Gly Thr Met Gly  
                                     130                                      135                                      140  
 Leu Gly Leu Cys Trp Asn Gly Phe Phe Pro Leu Tyr Asn Tyr Val Gly  
 145                                      150                                      155                                      160  
 Lys Pro Asp Cys Phe Gly Arg Ala Leu Lys Met Thr Tyr Ser Asn Leu  
                                     165                                      170                                      175  
 Leu Asp Gly Leu Ser Ala Ala Ala Val Leu Cys Met Gly Glu Gly Asp  
                                     180                                      185                                      190  
 Glu Gln Thr Pro Ile Ala Ile Ile Glu Glu Ala Pro Lys Ile Thr Phe  
                                     195                                      200                                      205  
 His Ser Ser Pro Thr Thr Leu Gln Asp Met Ser Thr Leu Ala Ile Ala  
                                     210                                      215                                      220  
 Glu Asp Glu Asp Leu Tyr Gly Pro Leu Leu Gln Ser Met Ala Trp Glu  
 225                                      230                                      235                                      240  
 Thr Pro Ala Pro Thr Ser  
                                     245

<210> 510  
 <211> 353  
 <212> PRT  
 <213> Chlamydia pneumoniae

<400> 510  
 Met Asn Lys Arg Gln Lys Asp Lys Leu Lys Ile Cys Val Ile Ile Ser  
 1                                      5                                      10                                      15  
 Thr Leu Ile Leu Val Gly Ile Phe Ala Arg Ala Pro Arg Gly Asp Thr  
                                     20                                      25                                      30  
 Phe Lys Thr Phe Leu Lys Ser Glu Glu Ala Ile Ile Tyr Ser Asn Gln  
                                     35                                      40                                      45  
 Cys Asn Glu Asp Met Arg Lys Ile Leu Cys Asp Ala Ile Glu His Ala  
                                     50                                      55                                      60  
 Asp Glu Glu Ile Phe Leu Arg Ile Tyr Asn Leu Ser Glu Pro Lys Ile  
 65                                      70                                      75                                      80  
 Gln Gln Ser Leu Thr Arg Gln Ala Gln Ala Lys Asn Lys Val Thr Ile  
                                     85                                      90                                      95  
 Tyr Tyr Gln Lys Phe Lys Ile Pro Gln Ile Leu Lys Gln Ala Ser Asn  
                                     100                                      105                                      110

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Val Thr Leu Val Glu Gln Pro Pro Ala Gly Arg Lys Leu Met His Gln
      115      120
Lys Ala Leu Ser Ile Asp Lys Lys Asp Ala Trp Leu Gly Ser Ala Asn
      130      135      140
Tyr Thr Asn Leu Ser Leu Arg Leu Asp Asn Asn Leu Ile Leu Gly Met
145      150      155      160
His Ser Ser Glu Leu Cys Asp Leu Ile Ile Thr Asn Thr Ser Gly Asp
      165      170      175
Phe Ser Ile Lys Asp Gln Thr Gly Lys Tyr Phe Val Leu Pro Gln Asp
      180      185      190
Arg Lys Ile Ala Ile Gln Ala Val Leu Glu Lys Ile Gln Thr Ala Gln
      195      200      205
Lys Thr Ile Gln Val Ala Met Phe Ala Leu Thr His Ser Glu Ile Ile
      210      215      220
Gln Ala Leu His Gln Ala Lys Gln Arg Gly Ile His Val Asp Ile Ile
225      230      235      240
Ile Asp Arg Ser His Ser Lys Leu Thr Phe Lys Gln Leu Arg Gln Leu
      245      250      255
Asn Ile Asn Lys Asp Phe Val Ser Ile Asn Thr Ala Pro Cys Thr Leu
      260      265      270
His His Lys Phe Ala Val Ile Asp Asn Lys Thr Leu Leu Ala Gly Ser
      275      280      285
Ile Asn Trp Ser Lys Gly Arg Phe Ser Leu Asn Asp Glu Ser Leu Ile
      290      295      300
Ile Leu Glu Asn Leu Thr Lys Gln Gln Asn Gln Lys Leu Arg Met Ile
305      310      315      320
Trp Lys Asp Leu Ala Lys His Ser Glu His Pro Thr Val Asp Asp Glu
      325      330      335
Glu Lys Glu Ile Ile Glu Lys Ser Leu Pro Val Glu Glu Gln Glu Ala
      340      345      350
Ala

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&lt;210&gt; 511

&lt;211&gt; 186

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 511

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Met Ala Leu Asn Phe Lys Ile Asn Arg Gln Ile Arg Ala Pro Lys Val
 1      5      10
Arg Leu Ile Gly Ser Ala Gly Glu Gln Leu Gly Ile Leu Ala Ile Lys
      20      25      30
Asp Ala Leu Asp Leu Ala Arg Glu Ala Gly Leu Asp Leu Val Glu Val
      35      40      45
Ala Ser Asn Ser Glu Pro Pro Val Cys Lys Ile Met Asp Tyr Gly Lys
      50      55      60
Tyr Arg Tyr Gly Leu Thr Lys Lys Glu Lys Asp Ser Lys Lys Ala Gln
65      70      75      80
His Gln Val Arg Ile Lys Glu Val Lys Leu Lys Pro Asn Ile Asp Glu
      85      90      95
Asn Asp Phe Ser Thr Lys Leu Lys Gln Ala Arg Thr Phe Val Glu Lys
      100      105      110
Gly Asn Lys Val Lys Ile Thr Cys Met Phe Arg Gly Arg Glu Leu Ala
      115      120      125
Tyr Pro Glu His Gly Phe Lys Val Val Gln Lys Met Ser Gln Gly Leu
      130      135      140
Glu Asp Ile Gly Phe Val Glu Ala Glu Pro Lys Leu Ala Gly Arg Ser
145      150      155      160
Leu Ile Cys Val Val Ala Pro Gly Thr Val Lys Thr Lys Lys Lys Gln
      165      170      175

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Glu Lys Ser His Ala Gln Asp Glu Asn Gln  
 180 185

<210> 512

<211> 276

<212> PRT

<213> Chlamydia pneumoniae

<220>

<221> VARIANT

<222> 269,270,271,272,274,275,276

<223> Xaa = Any Amino Acid

<400> 512

Met	Gly	Asn	Ser	Gly	Phe	Tyr	Leu	Gln	Asp	Thr	Gln	Asn	Thr	Ile	Phe
1				5					10					15	
Ala	Asp	Asn	Ile	Arg	Leu	Gly	Gln	Met	Thr	Thr	Val	Leu	Lys	Lys	Asp
			20					25					30		
Glu	Val	Ile	Ile	Gly	Thr	Asp	Thr	Thr	Pro	Thr	Val	Thr	Lys	Phe	Ser
		35					40					45			
Gly	Asp	Lys	Gly	Ile	Val	Ile	Thr	Thr	Asp	Ser	Thr	Ile	Thr	Pro	Ser
	50					55					60				
Ser	Thr	Thr	Phe	Ser	Leu	Asp	Met	Glu	Ala	Val	Ile	Lys	Glu	Val	Thr
	65				70					75					80
Asp	Lys	Ile	Leu	Thr	Gln	Ile	Glu	Asp	Glu	Leu	Val	Lys	Asp	Ile	Ile
				85					90					95	
Lys	Asn	Ile	Thr	Gln	Ser	Leu	Ile	Glu	Glu	Val	Ile	Lys	Lys	Ile	His
			100					105					110		
Ile	Asp	Pro	Ser	Phe	Ser	Tyr	Ser	Arg	Ala	Phe	Lys	Asp	Val	Asn	Ile
		115					120					125			
Thr	Asn	Lys	Ile	Gln	Cys	Asn	Gly	Leu	Phe	Thr	Lys	Glu	Asn	Ile	Gly
		130				135						140			
Asn	Leu	Asp	Gly	Gly	Thr	Glu	Ile	Ala	Ser	Ser	Ser	Val	Thr	Pro	Asp
	145				150					155					160
Asn	Ala	Asn	Ser	Met	Phe	Leu	Ile	Cys	Ala	Asp	Ile	Ile	Ala	Thr	Arg
				165					170					175	
Met	Glu	Gly	Thr	Val	Ala	Leu	Ala	Leu	Val	Lys	Glu	Gly	Asp	Leu	Ser
			180					185					190		
Pro	Cys	Ser	Ile	Ser	Tyr	Gly	Tyr	Ser	Ala	Gly	Tyr	Pro	Asn	Ile	Ile
		195					200					205			
Ser	Leu	Arg	Ala	Thr	Val	Gly	Asn	Lys	Thr	Thr	Ala	Pro	Val	Lys	Phe
	210					215					220				
Ser	Leu	Arg	Ala	Gly	Gly	Met	Asp	Ser	Gly	Val	Val	Trp	Val	Asn	Ala
	225				230					235					240
Met	Pro	Asn	Gly	Glu	Lys	Ile	Leu	Gly	Val	Asp	Ala	Val	Ser	Lys	Ile
				245					250					255	
Thr	Ile	Leu	Glu	Val	Lys	Pro	Gln	Thr	Asn	Gly	Thr	Xaa	Xaa	Xaa	Xaa
			260					265					270		
Phe	Xaa	Xaa	Xaa												
			275												

<210> 513

<211> 1044

<212> PRT

<213> Chlamydia pneumoniae

<400> 513

Met	Val	Glu	Val	Glu	Glu	Lys	His	Tyr	Thr	Ile	Val	Lys	Arg	Asn	Gly
1				5					10					15	
Met	Phe	Val	Pro	Phe	Asn	Gln	Asp	Arg	Ile	Phe	Gln	Ala	Leu	Glu	Ala
			20					25					30		

Ala	Phe	Arg	Asp	Thr	Arg	Ser	Leu	Glu	Thr	Ser	Ser	Pro	Leu	Pro	Lys
		35					40					45			
Asp	Leu	Glu	Glu	Ser	Ile	Ala	Gln	Ile	Thr	His	Lys	Val	Val	Lys	Glu
	50					55					60				
Val	Leu	Ala	Lys	Ile	Ser	Glu	Gly	Gln	Val	Val	Thr	Val	Glu	Arg	Ile
65					70					75					80
Gln	Asp	Leu	Val	Glu	Ser	Gln	Leu	Tyr	Ile	Ser	Gly	Leu	Gln	Asp	Val
				85					90					95	
Ala	Arg	Asp	Tyr	Ile	Val	Tyr	Arg	Asp	Gln	Arg	Lys	Ala	Glu	Arg	Gly
			100					105					110		
Asn	Ser	Ser	Ser	Ile	Ile	Ala	Ile	Arg	Arg	Asp	Gly	Gly	Ser	Ala	
		115					120					125			
Lys	Phe	Asn	Pro	Met	Lys	Ile	Ser	Ala	Ala	Leu	Glu	Lys	Ala	Phe	Arg
	130					135						140			
Ala	Thr	Leu	Gln	Ile	Asn	Gly	Met	Thr	Pro	Pro	Ala	Thr	Leu	Ser	Glu
145					150					155					160
Ile	Asn	Asp	Leu	Thr	Leu	Arg	Ile	Val	Glu	Asp	Val	Leu	Ser	Leu	His
				165					170						175
Gly	Glu	Glu	Ala	Ile	Asn	Leu	Glu	Glu	Ile	Gln	Asp	Ile	Val	Glu	Lys
			180					185					190		
Gln	Leu	Met	Val	Ala	Gly	Tyr	Tyr	Asp	Val	Ala	Lys	Asn	Tyr	Ile	Leu
		195					200					205			
Tyr	Arg	Glu	Ala	Arg	Ala	Arg	Ala	Arg	Ala	Asn	Lys	Asp	Gln	Asp	Gly
	210					215					220				
Gln	Glu	Glu	Phe	Val	Pro	Gln	Glu	Glu	Thr	Tyr	Val	Val	Gln	Lys	Glu
225					230					235					240
Asp	Gly	Thr	Thr	Tyr	Leu	Leu	Arg	Lys	Thr	Asp	Leu	Glu	Lys	Arg	Phe
				245					250					255	
Ser	Trp	Ala	Cys	Lys	Arg	Phe	Pro	Lys	Thr	Thr	Asp	Ser	Gln	Leu	Leu
			260					265					270		
Ala	Asp	Met	Ala	Phe	Met	Asn	Leu	Tyr	Ser	Gly	Ile	Lys	Glu	Asp	Glu
		275					280					285			
Val	Thr	Thr	Ala	Cys	Ile	Met	Ala	Ala	Arg	Ala	Asn	Ile	Glu	Arg	Glu
	290					295					300				
Pro	Asp	Tyr	Ala	Phe	Ile	Ala	Ala	Glu	Leu	Leu	Thr	Ser	Ser	Leu	Tyr
305					310					315					320
Glu	Glu	Thr	Leu	Gly	Cys	Ser	Ser	Gln	Asp	Pro	Asn	Leu	Ser	Glu	Ile
				325					330					335	
His	Lys	Lys	His	Phe	Lys	Glu	Tyr	Ile	Leu	Asn	Gly	Glu	Glu	Tyr	Arg
			340					345					350		
Leu	Asn	Pro	Gln	Leu	Lys	Asp	Tyr	Asp	Leu	Asp	Ala	Leu	Ser	Glu	Val
		355					360					365			
Leu	Asp	Leu	Ser	Arg	Asp	Gln	Gln	Phe	Ser	Tyr	Met	Gly	Val	Gln	Asn
	370					375					380				
Leu	Tyr	Asp	Arg	Tyr	Phe	Asn	Leu	His	Glu	Gly	Arg	Arg	Leu	Glu	Thr
385					390					395					400
Ala	Gln	Ile	Phe	Trp	Met	Arg	Val	Ser	Met	Gly	Leu	Ala	Leu	Asn	Glu
				405					410					415	
Gly	Glu	Gln	Lys	Asn	Phe	Trp	Ala	Ile	Thr	Phe	Tyr	Asn	Leu	Leu	Ser
			420					425					430		
Thr	Phe	Arg	Tyr	Thr	Pro	Ala	Thr	Pro	Thr	Leu	Phe	Asn	Ser	Gly	Met
		435					440					445			
Arg	His	Ser	Gln	Leu	Ser	Ser	Cys	Tyr	Leu	Ser	Thr	Val	Lys	Asp	Asp
	450					455					460				
Leu	Ser	His	Ile	Tyr	Lys	Val	Ile	Ser	Asp	Asn	Ala	Leu	Leu	Ser	Lys
465					470					475					480
Trp	Ala	Gly	Gly	Ile	Gly	Asn	Asp	Trp	Thr	Asp	Val	Arg	Ala	Thr	Gly
				485					490					495	
Ala	Val	Ile	Lys	Gly	Thr	Asn	Gly	Lys	Ser	Gln	Gly	Val	Ile	Pro	Phe
			500					505					510		
Ile	Lys	Val	Ala	Asn	Asp	Thr	Ala	Ile	Ala	Val	Asn	Gln	Gly	Gly	Lys

		515					520				525				
Arg	Lys	Gly	Ala	Met	Cys	Val	Tyr	Leu	Glu	Asn	Trp	His	Leu	Asp	Tyr
	530					535					540				
Glu	Asp	Phe	Leu	Glu	Leu	Arg	Lys	Asn	Thr	Gly	Asp	Glu	Arg	Arg	Arg
545					550					555					560
Thr	His	Asp	Ile	Asn	Thr	Ala	Ser	Trp	Ile	Pro	Asp	Leu	Phe	Phe	Lys
				565					570					575	
Arg	Leu	Glu	Lys	Lys	Gly	Met	Trp	Thr	Leu	Phe	Ser	Pro	Asp	Asp	Val
			580					585					590		
Pro	Gly	Leu	His	Glu	Ala	Tyr	Gly	Leu	Glu	Phe	Glu	Lys	Leu	Tyr	Glu
		595					600					605			
Glu	Tyr	Glu	Arg	Lys	Val	Glu	Ser	Gly	Glu	Ile	Arg	Leu	Tyr	Lys	Lys
	610					615					620				
Val	Glu	Ala	Glu	Val	Leu	Trp	Arg	Lys	Met	Leu	Ser	Met	Leu	Tyr	Glu
625					630					635					640
Thr	Gly	His	Pro	Trp	Ile	Thr	Phe	Lys	Asp	Pro	Ser	Asn	Ile	Arg	Ser
				645					650					655	
Asn	Gln	Asp	His	Val	Gly	Val	Val	Arg	Cys	Ser	Asn	Leu	Cys	Thr	Glu
			660					665					670		
Ile	Leu	Leu	Asn	Cys	Ser	Glu	Ser	Glu	Thr	Ala	Val	Cys	Asn	Leu	Gly
		675					680					685			
Ser	Ile	Asn	Leu	Val	Glu	His	Ile	Arg	Asn	Asp	Lys	Leu	Asp	Glu	Glu
	690					695					700				
Lys	Leu	Lys	Glu	Thr	Ile	Ser	Ile	Ala	Ile	Arg	Ile	Leu	Asp	Asn	Val
705					710					715					720
Ile	Asp	Leu	Asn	Phe	Tyr	Pro	Thr	Pro	Glu	Ala	Lys	Gln	Ala	Asn	Leu
				725					730					735	
Thr	His	Arg	Ala	Val	Gly	Leu	Gly	Val	Met	Gly	Phe	Gln	Asp	Val	Leu
			740					745					750		
Tyr	Glu	Leu	Asn	Ile	Ser	Tyr	Ala	Ser	Gln	Glu	Ala	Val	Glu	Phe	Ser
		755					760					765			
Asp	Glu	Cys	Ser	Glu	Ile	Ile	Ala	Tyr	Tyr	Ala	Ile	Leu	Ala	Ser	Ser
	770					775					780				
Leu	Leu	Ala	Lys	Glu	Arg	Gly	Thr	Tyr	Ala	Ser	Tyr	Ser	Gly	Ser	Lys
785					790					795					800
Trp	Asp	Arg	Gly	Tyr	Leu	Pro	Leu	Asp	Thr	Ile	Glu	Leu	Leu	Lys	Glu
			805											815	
Thr	Arg	Gly	Glu	His	Asn	Val	Leu	Val	Asp	Thr	Ser	Ser	Lys	Lys	Asp
			820					825					830		
Trp	Thr	Pro	Val	Arg	Asp	Thr	Ile	Gln	Lys	Tyr	Gly	Met	Arg	Asn	Ser
		835					840					845			
Gln	Val	Met	Ala	Ile	Ala	Pro	Thr	Ala	Thr	Ile	Ser	Asn	Ile	Ile	Gly
	850					855					860				
Val	Thr	Gln	Ser	Ile	Glu	Pro	Met	Tyr	Lys	His	Leu	Phe	Val	Lys	Ser
865															

Gly Ile Gln Pro Arg Trp Met Lys Asn Lys Ser Ala Ser Thr Ser Ile  
 1010 1015 1020  
 Val Val Glu Arg Lys Thr Thr Pro Val Cys Ser Met Glu Glu Gly Cys  
 1025 1030 1035 1040  
 Glu Ser Cys Gln

<210> 514  
 <211> 346  
 <212> PRT  
 <213> Chlamydia pneumoniae

<400> 514  
 Met Glu Ala Asp Ile Leu Asp Gly Lys Leu Lys Arg Val Glu Val Ser  
 1 5 10 15  
 Lys Lys Gly Leu Val Asn Cys Asn Gln Val Asp Val Asn Gln Leu Val  
 20 25 30  
 Pro Ile Lys Tyr Lys Trp Ala Trp Glu His Tyr Leu Asn Gly Cys Ala  
 35 40 45  
 Asn Asn Trp Leu Pro Thr Glu Val Pro Met Ala Arg Asp Ile Glu Leu  
 50 55 60  
 Trp Lys Ser Asp Glu Leu Ser Glu Asp Glu Arg Arg Val Ile Leu Leu  
 65 70 75 80  
 Asn Leu Gly Phe Phe Ser Thr Ala Glu Ser Leu Val Gly Asn Asn Ile  
 85 90 95  
 Val Leu Ala Ile Phe Lys His Ile Thr Asn Pro Glu Ala Arg Gln Tyr  
 100 105 110  
 Leu Leu Arg Gln Ala Phe Glu Glu Ala Val His Thr His Thr Phe Leu  
 115 120 125  
 Tyr Ile Cys Glu Ser Leu Gly Leu Asp Glu Gly Glu Val Phe Asn Ala  
 130 135 140  
 Tyr Asn Glu Arg Ala Ser Ile Arg Ala Lys Asp Asp Phe Gln Met Thr  
 145 150 155 160  
 Leu Thr Val Asp Val Leu Asp Pro Asn Phe Ser Val Gln Ser Ser Glu  
 165 170 175  
 Gly Leu Gly Gln Phe Ile Lys Asn Leu Val Gly Tyr Tyr Ile Ile Met  
 180 185 190  
 Glu Gly Ile Phe Phe Tyr Ser Gly Phe Val Met Ile Leu Ser Phe His  
 195 200 205  
 Arg Gln Asn Lys Met Thr Gly Ile Gly Glu Gln Tyr Gln Tyr Ile Leu  
 210 215 220  
 Arg Asp Glu Thr Ile His Leu Asn Phe Gly Ile Asp Leu Ile Asn Gly  
 225 230 235 240  
 Ile Lys Glu Glu Asn Pro Glu Val Trp Thr Thr Glu Leu Gln Glu Glu  
 245 250 255  
 Ile Val Ala Leu Ile Glu Lys Ala Val Glu Leu Glu Ile Glu Tyr Ala  
 260 265 270  
 Lys Asp Cys Leu Pro Arg Gly Ile Leu Gly Leu Arg Ser Ser Met Phe  
 275 280 285  
 Ile Asp Tyr Val Arg His Ile Ala Asp Arg Arg Leu Glu Arg Ile Gly  
 290 295 300  
 Leu Lys Pro Ile Tyr His Ser Arg Asn Pro Phe Pro Trp Met Ser Glu  
 305 310 315 320  
 Thr Met Asp Leu Asn Lys Glu Lys Asn Phe Phe Glu Thr Arg Val Thr  
 325 330 335  
 Glu Tyr Gln Thr Ala Gly Asn Leu Ser Trp  
 340 345

<210> 515  
 <211> 327  
 <212> PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 515

```

Met Asp Ala Lys Met Gly Tyr Ile Phe Lys Val Met Arg Trp Ile Phe
 1          5          10          15
Cys Phe Val Ala Cys Gly Ile Thr Phe Gly Cys Thr Asn Ser Gly Phe
          20          25          30
Gln Asn Ala Asn Ser Arg Pro Cys Ile Leu Ser Met Asn Arg Met Ile
          35          40          45
His Asp Cys Val Glu Arg Val Val Gly Asn Arg Leu Ala Thr Ala Val
          50          55          60
Leu Ile Lys Gly Ser Leu Asp Pro His Ala Tyr Glu Met Val Lys Gly
65          70          75          80
Asp Lys Asp Lys Ile Ala Gly Ser Ala Val Ile Phe Cys Asn Gly Leu
          85          90          95
Gly Leu Glu His Thr Leu Ser Leu Arg Lys His Leu Glu Asn Asn Pro
          100          105          110
Asn Ser Val Lys Leu Gly Glu Arg Leu Ile Ala Arg Gly Ala Phe Val
          115          120          125
Pro Leu Glu Glu Asp Gly Ile Cys Asp Pro His Ile Trp Met Asp Leu
          130          135          140
Ser Ile Trp Lys Glu Ala Val Ile Glu Ile Thr Glu Val Leu Ile Glu
145          150          155          160
Lys Phe Pro Glu Trp Ser Ala Glu Phe Lys Ala Asn Ser Glu Glu Leu
          165          170          175
Val Cys Glu Met Ser Ile Leu Asp Ser Trp Ala Lys Gln Cys Leu Ser
          180          185          190
Thr Ile Pro Glu Asn Leu Arg Tyr Leu Val Ser Gly His Asn Ala Phe
          195          200          205
Ser Tyr Phe Thr Arg Arg Tyr Leu Ala Thr Pro Glu Glu Val Ala Ser
          210          215          220
Gly Ala Trp Arg Ser Arg Cys Ile Ser Pro Glu Gly Leu Ser Pro Glu
225          230          235          240
Ala Gln Ile Ser Val Arg Asp Ile Met Ala Val Val Asp Tyr Ile Asn
          245          250          255
Glu His Asp Val Ser Val Val Phe Pro Glu Asp Thr Leu Asn Gln Asp
          260          265          270
Ala Leu Lys Lys Ile Val Ser Ser Leu Lys Lys Ser His Leu Val Arg
          275          280          285
Leu Ala Gln Lys Pro Leu Tyr Ser Asp Asn Val Asp Asp Asn Tyr Phe
          290          295          300
Ser Thr Phe Lys His Asn Val Cys Leu Ile Thr Glu Glu Leu Gly Gly
305          310          315          320
Val Ala Leu Glu Cys Gln Arg
          325

```

&lt;210&gt; 516

&lt;211&gt; 101

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 516

```

Met Asn Asn Arg Gln Asn Thr Asn Asp Phe Ile Arg Ile Val Lys Asp
 1          5          10          15
Val Glu Lys Ala Phe Pro Glu Leu Asp Ile Lys Val Lys Ile Asp Lys
          20          25          30
Glu Lys Val Thr Phe Leu Thr Ser Pro Thr Glu Leu Tyr His Lys Ser
          35          40          45
Ile Ser Val Ile Leu Asn Leu Leu Asn Ser Ile Glu Ser Ser Leu Asp
          50          55          60
Leu Phe Pro Asp Ser Pro Val Val Glu Glu Leu Glu Lys Asn Asn Leu

```

65                      70                      75                      80  
Lys Leu Lys Lys Ala Leu Ile Met Leu Ile Leu Ser Arg Lys Asp Met  
                      85                      90                      95  
Phe Ser Lys Thr Glu  
                      100

```
<210> 517
<211> 261
<212> PRT
<213> Chlamydia pneumoniae
```

[illegible]

```
<210> 518
<211> 526
<212> PRT
<213> Chlamydia pneumoniae
```

<400> 518																
Met	Asn	Val	Leu	Lys	Tyr	Thr	Lys	His	Ser	Pro	Ser	Ala	His	Ala	Trp	
1				5					10					15		
Lys	Leu	Ile	Gly	Thr	Ser	Pro	Lys	His	Gly	Ile	Tyr	Leu	Pro	Leu	Phe	
			20					25					30			
Ser	Ile	His	Thr	Lys	Asn	Ser	Cys	Gly	Ile	Gly	Glu	Phe	Leu	Asp	Leu	
		35					40					45				
Ile	Pro	Leu	Ile	Ser	Trp	Cys	Gln	Lys	Gln	Gly	Phe	Ser	Val	Ile	Gln	
	50					55					60					



```

Leu Leu Pro Leu Asn Asp Thr Gly Glu Asp Thr Ser Pro Tyr Asn Ser
65      70      75      80
Ile Ser Ser Val Ala Leu Asn Pro Leu Phe Leu Ser Leu Ser Ser Leu
      85      90      95
Pro Asn Ile Asp Thr Ile Pro Glu Val Ala Lys Lys Leu Gln Asp Met
      100      105      110
His Glu Leu Cys Ser Thr Pro Ser Val Ser Tyr Thr Gln Val Lys Glu
      115      120      125
Lys Lys Trp Ala Phe Leu Arg Glu Tyr Tyr Gln Lys Cys Cys Lys Ser
      130      135      140
Ser Leu Glu Gly Asn Ser Asn Phe Ser Glu Phe Leu Glu Ser Glu Arg
145      150      155      160
Tyr Trp Leu Tyr Pro Tyr Gly Thr Phe Arg Ala Ile Lys His His Met
      165      170      175
His Gly Glu Pro Ile Asn Asn Trp Pro Lys Ser Leu Thr Asp Gln Glu
      180      185      190
Asn Phe Pro Asp Leu Thr Lys Lys Phe His Asp Glu Val Leu Phe Phe
      195      200      205
Ser Tyr Leu Gln Phe Leu Cys Tyr Gln Gln Leu Cys Glu Val Lys Ala
      210      215      220
Tyr Ala Asp Gln His His Val Leu Leu Lys Gly Asp Leu Pro Ile Leu
225      230      235      240
Ile Ser Lys Asp Ser Cys Asp Val Trp Tyr Phe Arg Asp Tyr Phe Ser
      245      250      255
Ser Ser Arg Ser Val Gly Ala Pro Pro Asp Leu Tyr Asn Ser Glu Gly
      260      265      270
Gln Asn Trp His Leu Pro Ile Tyr Asn Phe Ser Gln Leu Ala Lys Asp
      275      280      285
Asp Tyr Ile Trp Trp Lys Glu Arg Leu Arg Tyr Ala Gln Asn Phe Tyr
      290      295      300
Ser Val Tyr Arg Leu Asp His Ile Ile Gly Phe Phe Arg Leu Trp Ile
305      310      315      320
Trp Asp Ser Ser Gly Arg Gly Arg Phe Ile Pro Asp Asn Pro Lys Asp
      325      330      335
Tyr Ile Lys Gln Gly Thr Glu Ile Leu Ser Thr Met Leu Gly Ala Ser
      340      345      350
Ser Met Leu Pro Ile Gly Glu Asp Leu Gly Ile Ile Pro Gln Asp Val
      355      360      365
Lys Thr Thr Leu Thr His Leu Gly Ile Cys Gly Thr Arg Ile Pro Arg
      370      375      380
Trp Glu Arg Asn Trp Glu Ser Asp Ser Ala Phe Ile Pro Leu Lys Asp
385      390      395      400
Tyr Asn Pro Leu Ser Val Thr Thr Leu Ser Thr His Asp Ser Asp Thr
      405      410      415
Phe Ala Gln Trp Trp Leu Asn Ser Pro Lys Glu Ala Lys Gln Phe Ala
      420      425      430
Lys Phe Leu His Leu Pro Phe Gln Lys Thr Leu Thr Thr Glu Thr Gln
      435      440      445
Ile Asp Ile Leu Lys Leu Ser His Glu Ser Ala Ser Ile Phe His Ile
      450      455      460
Asn Leu Phe Asn Asp Tyr Leu Ala Leu Cys Pro Asp Leu Val Ser Lys
465      470      475      480
Asn Leu Gln Arg Glu Arg Ile Asn Thr Pro Gly Thr Ile Ser Lys Lys
      485      490      495
Asn Trp Ser Tyr Arg Val Arg Pro Ser Leu Glu Glu Leu Ala Ile His
      500      505      510
Lys Lys Phe Asn Gly Tyr Ile Glu Lys Ile Leu Thr Gly Leu
      515      520      525

```

&lt;210&gt; 519

&lt;211&gt; 147

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 519

```

Met Gln Asn Gln Tyr Glu Gln Leu Leu Glu Ser Leu Ala Pro Leu Leu
 1      5      10      15
Asn Thr Thr Leu Ala Pro Asp Lys Asn Asn Ser Cys Leu Ile Arg Phe
      20      25      30
Ser Asp Thr His Val Pro Val Gln Ile Glu Glu Asp Gly Asn Ser Gly
      35      40      45
Asp Leu Ala Val Ser Thr Leu Leu Gly Thr Leu Pro Glu Asn Val Phe
      50      55      60
Arg Glu Arg Ile Phe Lys Ala Ala Leu Ser Val Asn Gly Ser Phe Gln
      65      70      75      80
Ser Ser Ile Lys Gly Ile Leu Gly Tyr Gly Glu Val Thr Gln Gln Leu
      85      90      95
Tyr Leu Ser Asp Ile Leu Ser Met Asn Tyr Leu Asn Gly Glu Lys Leu
      100     105     110
Phe Glu Tyr Leu Lys Leu Phe Ser Leu His Ala Lys Ile Trp Met Glu
      115     120     125
Ser Leu Arg Thr Gly Asn Leu Pro Asp Leu His Val Leu Gly Ile Tyr
      130     135     140
Tyr Val Ala
145

```

&lt;210&gt; 520

&lt;211&gt; 635

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 520

```

Met Ile Pro Phe Thr Lys Thr Ile Gly Phe Arg Leu Trp Leu Ala Cys
 1      5      10      15
Ala Val Ala Ile Ala Pro Leu Gly Ile Asn Ile Val Trp Leu Asn
      20      25      30
Leu Asp Gln Tyr Arg Thr Ile Val Ser Ala Ile Ser Thr Ala Leu Lys
      35      40      45
Glu Asn Ala Ala Phe Lys Ala Asn Thr Leu Thr Gln Ile Val Pro Leu
      50      55      60
Asn Val Asp Val Leu Ser Leu Phe Ser Asp Val Leu Asp Leu Asp Ala
      65      70      75      80
Gly Ile Pro Glu Thr Pro Asn Val Leu Leu Ser Asn Glu Met Gln Lys
      85      90      95
Val Phe Gln Gly Ile Tyr Asn Glu Ile Ser Leu Ile Lys Val Phe Pro
      100     105     110
Asn Gly Asp Lys Ile Val Val Ala Ser Ser Ile Pro Glu His Leu Gly
      115     120     125
Glu Asn Tyr Asn His Lys Ile Asp Ile Pro Lys Asn Thr Pro Phe Leu
      130     135     140
Ala Ala Leu Lys Gln Ser Pro Lys Asn Gln Glu Val Phe Ser Val Met
      145     150     155     160
Gln Ala Asn Val Phe Asp Ala Lys Thr Gln Glu Leu Gln Gly Ile Leu
      165     170     175
Tyr Thr Thr Phe Ser Ala Glu Ser Leu Leu Lys Asp Leu Leu Ile Asn
      180     185     190
Lys Gln Ser Tyr Leu Thr Val Lys Thr Ala Ile Leu Ser Lys Tyr Gly
      195     200     205
Val Ile Leu Lys Ala Ser Asp Pro Ala Leu His Leu His Thr Val Tyr
      210     215     220
Pro Asp Met Thr Lys Glu Lys Phe Cys Gln Val Phe Leu Asn Asp Asp
      225     230     235     240

```

Pro	Cys	Pro	Ile	Asp	Ser	Glu	Leu	Gly	Pro	Leu	Thr	Leu	Ser	Pro	Leu
Asp	Ile	Gly	Glu	Asn	Phe	Tyr	Ser	Phe	Lys	Ile	Lys	Asp	Thr	Glu	Ile
Trp	Gly	Cys	Ile	Glu	Asn	Val	Pro	Ser	Ile	Asp	Ile	Ala	Val	Leu	Ser
Tyr	Ala	Lys	Lys	Glu	Glu	Ser	Phe	Ala	Pro	Leu	Trp	Arg	Arg	Ala	Arg
Met	Tyr	Thr	Ala	Tyr	Phe	Cys	Ile	Leu	Leu	Leu	Gly	Ser	Leu	Ile	Ala
Phe	Ile	Val	Ala	Arg	Arg	Leu	Ser	Leu	Pro	Ile	Arg	Lys	Leu	Ala	Thr
Ala	Met	Ile	Glu	Ser	Arg	Lys	Asn	Lys	Asn	Cys	Leu	Tyr	Thr	Asp	Asp
Ser	Leu	Gly	Phe	Glu	Ile	Asn	Arg	Leu	Gly	His	Ile	Phe	Asn	Ala	Met
Val	Glu	Asn	Leu	His	Lys	Gln	Gln	His	Leu	Ala	Lys	Thr	Asn	Phe	Glu
Met	Lys	Glu	Asn	Ala	Gln	Asn	Ala	Leu	His	Leu	Gly	Glu	Gln	Ala	Gln
Gln	Arg	Leu	Leu	Pro	Asn	Thr	Leu	Pro	Ser	Tyr	Pro	His	Ile	Glu	Leu
Ala	Lys	Ala	Tyr	Ile	Pro	Ala	Ile	Thr	Val	Gly	Gly	Asp	Phe	Phe	Asp
Val	Phe	Val	Val	Gly	Glu	Gly	Ser	Lys	Ala	Arg	Leu	Phe	Leu	Ile	Val
Ala	Asp	Ala	Ser	Gly	Lys	Gly	Val	Asn	Ala	Cys	Gly	Tyr	Ser	Leu	Phe
Leu	Lys	Asn	Met	Leu	Arg	Thr	Phe	Leu	Ser	Arg	Ser	Ser	Ser	Leu	Gln
Gln	Ala	Ile	Gln	Glu	Thr	Ser	Arg	Leu	Phe	Tyr	Asn	Asn	Thr	Lys	Asn
Ser	Gly	Met	Phe	Val	Thr	Leu	Cys	Val	Tyr	Cys	Tyr	His	Gln	Thr	Ser
Asn	Thr	Met	Glu	Tyr	Tyr	Ser	Cys	Gly	His	Pro	Pro	Ala	Cys	Tyr	Leu
Asp	Pro	Asp	Gly	Glu	Thr	Ser	Trp	Leu	Phe	His	Pro	Gly	Met	Ala	Leu
Gly	Phe	Leu	Pro	Glu	Val	Ala	Asn	Ile	Thr	Ser	Lys	Leu	Phe	His	Pro
Lys	Pro	Gly	Ser	Leu	Phe	Val	Leu	Tyr	Ser	Asp	Gly	Ile	Thr	Glu	Ala
His	Asn	Asn	Asn	Asn	Asp	Met	Phe	Gly	Glu	Glu	Arg	Leu	Gln	Ala	Ala
Ile	Gln	Gly	Leu	Thr	Gly	Lys	Ser	Ala	Ala	Asp	Ala	Val	His	Arg	Leu
Met	Leu	Ser	Val	Lys	Thr	Phe	Val	Gly	Asn	Ser	His	Gln	His	Asp	Asp
Ile	Thr	Leu	Leu	Ile	Leu	Lys	Val	Leu	Glu	Ser					

<210> 521

<211> 314

<212> PRT

<213> Chlamydia pneumoniae

<400> 521

Met Phe Ser Tyr Ile Lys Asn Arg Ile Leu Phe Asn Leu Leu Ser Leu  
1 5 10 15  
Trp Ile Val Leu Thr Leu Thr Phe Leu Val Met Lys Thr Ile Pro Gly  
20 25 30

```

Asp Pro Phe Asn Asp Glu Gly Cys Asn Val Leu Ser Glu Glu Val Leu
      35      40      45
Gln Thr Leu Lys Ser Arg Tyr Gly Leu Asp Lys Pro Leu Tyr Gln Gln
      50      55      60
Tyr Thr Gln Tyr Leu His Ser Ile Ala Lys Leu Asp Phe Gly Asn Ser
      65      70      75      80
Leu Val Tyr Lys Asp Arg Lys Val Thr Asn Ile Ile Ser Thr Ala Phe
      85      90      95
Pro Ile Ser Ala Ile Leu Gly Leu Gln Ser Leu Phe Leu Ser Ile Gly
      100      105      110
Gly Gly Ile Ala Leu Gly Thr Ile Ala Ala Leu Lys Lys Lys Gln
      115      120      125
Arg Arg Tyr Ile Leu Gly Ala Ser Ile Leu Gln Ile Ser Ile Pro Ala
      130      135      140
Phe Ile Phe Ala Thr Leu Leu Gln Tyr Val Phe Ala Val Lys Ile Pro
      145      150      155      160
Leu Leu Pro Ile Ala Cys Trp Gly Ser Phe Thr His Thr Ile Leu Pro
      165      170      175
Thr Leu Ala Leu Ala Val Thr Pro Met Ala Phe Ile Ile Gln Leu Thr
      180      185      190
Tyr Ser Ser Val Ser Ala Ala Leu Asn Lys Asp Tyr Val Leu Leu Ala
      195      200      205
Tyr Ala Lys Gly Leu Ser Pro Leu Lys Val Val Ile Lys His Ile Leu
      210      215      220
Pro Tyr Ala Ile Phe Pro Thr Ile Ser Tyr Ser Ala Phe Leu Thr Thr
      225      230      235      240
Thr Val Ile Thr Gly Thr Phe Ala Ile Glu Asn Ile Phe Cys Ile Pro
      245      250      255
Gly Leu Gly Lys Trp Phe Ile Cys Ser Ile Lys Gln Arg Asp Tyr Pro
      260      265      270
Val Ala Leu Gly Leu Ser Val Phe Tyr Gly Thr Leu Phe Met Leu Ser
      275      280      285
Ser Leu Leu Ser Asp Leu Ile Gln Ser Ile Ile Asp Pro Gln Ile Arg
      290      295      300
Tyr Ala His Gly Lys Glu Lys Lys Arg Lys
      305      310

```

&lt;210&gt; 522

&lt;211&gt; 1240

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 522

```

Met Thr Trp Ile Pro Leu His Cys His Ser Gln Tyr Ser Val Leu Asp
  1      5      10      15
Ala Met Ser Ser Ile Lys Asp Phe Val Ala Lys Gly Gln Glu Phe Gly
      20      25      30
Ile Pro Ala Leu Ala Leu Thr Asp His Gly Asn Leu Tyr Gly Ala Val
      35      40      45
Asp Phe Tyr Lys Glu Cys Thr Gln Lys Gly Ile Gln Pro Ile Ile Gly
      50      55      60
Cys Glu Cys Tyr Ile Ala Pro Gly Ser Arg Phe Asp Lys Lys Lys Glu
      65      70      75      80
Lys Arg Ser Arg Ala Ala His His Leu Ile Leu Leu Cys Lys Asn Glu
      85      90      95
Gln Gly Tyr Arg Asn Leu Cys Ile Leu Thr Ser Leu Ala Phe Thr Glu
      100      105      110
Gly Phe Tyr Tyr Phe Pro Arg Ile Asp Lys Asp Leu Leu Arg Gln Tyr
      115      120      125
Ser Glu Gly Leu Ile Cys Leu Ser Gly Cys Leu Ser Ser Ser Val Ser
      130      135      140

```

Asp	Ala	Ala	Leu	Lys	Ser	Pro	Glu	Ala	Leu	Leu	Leu	Glu	Leu	Gln	Trp
145				150					155					160	
Phe	Gln	Asp	Leu	Phe	Lys	Asp	Asp	Tyr	Phe	Thr	Glu	Val	Gln	Leu	His
			165					170						175	
Lys	Met	Ser	Glu	Glu	Ser	Ile	Ala	Gly	Phe	Lys	Glu	Glu	Trp	Leu	Lys
			180					185					190		
Gln	Glu	Tyr	Tyr	Ser	Leu	Ile	Glu	Lys	Gln	Ile	Lys	Val	Asn	Thr	Ala
		195					200					205			
Val	Leu	Glu	Ala	Ser	Lys	Arg	Leu	Gly	Ile	Pro	Thr	Val	Ala	Thr	Asn
	210				215						220				
Asp	Ile	His	Tyr	Ile	Asn	Ala	Asn	Asp	Trp	Gln	Ala	His	Glu	Ile	Leu
225				230					235					240	
Leu	Asn	Val	Gln	Ser	Gly	Glu	Thr	Val	Arg	Ile	Ala	Lys	Gln	Asn	Thr
			245					250						255	
His	Ile	Pro	Asn	Pro	Lys	Arg	Lys	Val	Tyr	Arg	Ser	Arg	Glu	Tyr	Tyr
		260						265					270		
Phe	Lys	Ser	Pro	Ala	Gln	Met	Ala	Glu	Leu	Phe	Lys	Asp	Ile	Pro	Glu
	275					280						285			
Val	Ile	Ser	Asn	Thr	Leu	Glu	Val	Ala	Lys	Arg	Cys	Asp	Phe	Thr	Phe
	290				295						300				
Asp	Phe	Ser	Lys	Lys	His	Tyr	Pro	Ile	Tyr	Val	Pro	Glu	Ser	Leu	Lys
305				310					315					320	
Thr	Leu	Asn	Ser	Tyr	Thr	Glu	Glu	Asp	Arg	Tyr	Gln	Ala	Ser	Ala	Val
			325					330						335	
Phe	Leu	Lys	Gln	Leu	Ala	Glu	Glu	Ala	Leu	Pro	Lys	Lys	Tyr	Ser	Ser
		340						345					350		
Glu	Val	Leu	Ala	His	Ile	Ala	Lys	Phe	Pro	His	Arg	Asp	Pro	Ile	
	355					360					365				
Asp	Ile	Val	Lys	Glu	Arg	Met	Asp	Met	Glu	Met	Ala	Ile	Ile	Ile	Pro
	370				375						380				
Lys	Gly	Met	Cys	Asp	Tyr	Leu	Leu	Ile	Val	Trp	Asp	Ile	Ile	His	Trp
385				390					395					400	
Ala	Lys	Ala	Asn	Gly	Ile	Pro	Val	Gly	Pro	Gly	Arg	Gly	Ser	Gly	Ala
			405					410						415	
Gly	Ser	Val	Leu	Phe	Leu	Leu	Gly	Ile	Thr	Glu	Ile	Glu	Pro	Ile	
		420					425					430			
Arg	Phe	Asp	Leu	Phe	Phe	Glu	Arg	Phe	Ile	Asn	Pro	Glu	Arg	Leu	Ser
	435					440						445			
Tyr	Pro	Asp	Ile	Asp	Ile	Asp	Ile	Cys	Met	Ala	Gly	Arg	Glu	Arg	Val
	450				455					460					
Ile	Asn	Tyr	Ala	Ile	Glu	Arg	His	Gly	Lys	Asp	Asn	Val	Ala	Gln	Ile
465				470					475					480	
Ile	Thr	Phe	Gly	Thr	Met	Lys	Ala	Lys	Met	Ala	Val	Lys	Asp	Val	Gly
			485					490						495	
Arg	Thr	Leu	Asp	Met	Ala	Leu	Ser	Lys	Val	Asn	His	Ile	Ala	Lys	His
		500					505						510		
Ile	Pro	Asp	Leu	Asn	Thr	Thr	Leu	Ser	Lys	Ala	Leu	Glu	Thr	Asp	Pro
	515					520						525			
Asp	Leu	His	Gln	Leu	Tyr	Ile	Asn	Asp	Ala	Glu	Ser	Ala	Gln	Val	Ile
	530					535					540				
Asp	Met	Ala	Leu	Cys	Leu	Glu	Gly	Ser	Ile	Arg	Asn	Thr	Gly	Val	His
545				550					555					560	
Ala	Ala	Gly	Val	Ile	Ile	Cys	Gly	Asp	Gln	Leu	Thr	Asn	His	Ile	Pro
			565					570						575	
Ile	Cys	Ile	Ser	Lys	Asp	Ser	Thr	Met	Ile	Thr	Thr	Gln	Tyr	Ser	Met
		580					585						590		
Lys	Pro	Val	Glu	Ser	Val	Gly	Met	Leu	Lys	Val	Asp	Leu	Leu	Gly	Leu
	595					600						605			
Lys	Thr	Leu	Thr	Ser	Ile	Asn	Ile	Ala	Met	Ser	Ala	Ile	Glu	Lys	Lys
	610				615						620				
Thr	Gly	Gln	Ser	Leu	Ala	Met	Ala	Thr	Leu	Pro	Leu	Asp	Asp	Ala	Thr

625					630					635				640
Thr	Phe	Ser	Leu	Leu	His	Gln	Gly	Lys	Thr	Met	Gly	Ile	Phe	Gln Met
				645					650					655
Glu	Ser	Lys	Gly	Met	Gln	Glu	Leu	Ala	Lys	Asn	Leu	Arg	Pro	Asp Leu
			660					665					670	
Phe	Glu	Glu	Ile	Ile	Ala	Met	Gly	Ala	Leu	Tyr	Arg	Pro	Gly	Pro Met
			675				680					685		
Asp	Met	Ile	Pro	Ser	Phe	Ile	Asn	Arg	Lys	His	Gly	Lys	Glu	Ile Ile
	690					695				700				
Glu	Tyr	Asp	His	Pro	Leu	Met	Glu	Ser	Ile	Leu	Lys	Glu	Thr	Tyr Gly
705					710					715				720
Ile	Met	Val	Tyr	Gln	Glu	Gln	Val	Met	Gln	Ile	Ala	Gly	Ala	Leu Ala
				725					730					735
Ser	Tyr	Ser	Leu	Gly	Glu	Gly	Asp	Val	Leu	Arg	Arg	Ala	Met	Gly Lys
			740				745					750		
Lys	Asp	Phe	Gln	Gln	Met	Glu	Gln	Glu	Arg	Glu	Lys	Phe	Cys	Lys Arg
	755					760						765		
Ala	Cys	Asn	Asn	Gly	Ile	Asp	Pro	Glu	Leu	Ala	Thr	Val	Ile	Phe Asp
	770					775					780			
Lys	Met	Glu	Lys	Phe	Ala	Ala	Tyr	Gly	Phe	Asn	Lys	Ser	His	Ala Ala
785					790					795				800
Ala	Tyr	Gly	Leu	Ile	Thr	Tyr	Thr	Thr	Ala	Tyr	Leu	Lys	Ala	Asn Tyr
				805					810					815
Pro	Lys	Glu	Trp	Leu	Ala	Ala	Leu	Leu	Thr	Cys	Asp	Ser	Asp	Asp Ile
			820					825					830	
Glu	Lys	Ile	Gly	Lys	Leu	Ile	Arg	Glu	Ala	Gln	Ser	Met	Gly	Ile Pro
		835					840					845		
Ile	Leu	Pro	Pro	His	Ile	Asn	Val	Ser	Ser	Asn	His	Phe	Val	Ala Thr
	850					855					860			
Asp	Glu	Gly	Ile	Arg	Phe	Ala	Met	Gly	Ala	Ile	Lys	Gly	Ile	Gly Arg
865					870					875				880
Gly	Leu	Ile	Glu	Ser	Ile	Val	Glu	Glu	Arg	Asp	His	His	Gly	Pro Tyr
				885					890					895
Glu	Ser	Ile	Arg	Asp	Phe	Ile	Gln	Arg	Ser	Asp	Leu	Lys	Lys	Val Ser
			900					905					910	
Lys	Lys	Ser	Ile	Glu	Ser	Leu	Ile	Asp	Ala	Gly	Cys	Phe	Asp	Cys Phe
		915					920					925		
Asp	Ser	Asn	Arg	Asp	Leu	Leu	Leu	Ala	Ser	Val	Glu	Pro	Leu	Tyr Glu
	930					935					940			
Ala	Ile	Ala	Lys	Asp	Lys	Lys	Glu	Ala	Ala	Ser	Gly	Val	Met	Thr Phe
945					950					955				960
Phe	Thr	Leu	Gly	Ala	Met	Asp	Arg	Lys	Asn	Glu	Val	Pro	Ile	Cys Leu
				965					970					975
Pro	Lys	Asp	Ile	Pro	Thr	Arg	Ser	Lys	Lys	Glu	Leu	Leu	Lys	Lys Glu
			980					985					990	
Lys	Glu	Leu	Leu	Gly	Ile	Tyr	Leu	Thr	Glu	His	Pro	Met	Asp	Thr Val
		995				1000						1005		
Arg	Asp	His	Leu	Ser	Arg	Leu	Ser	Val	Val	Leu	Ala	Gly	Glu	Phe Glu
	1010					1015						1020		
Asn	Leu	Pro	His	Gly	Ser	Val	Val	Arg	Thr	Val	Phe	Ile	Ile	Asp Lys
1025					1030					1035				1040
Val	Thr	Thr	Lys	Ile	Ser	Ser	Lys	Ala	Gln	Lys	Lys	Phe	Ala	Val Leu
				1045					1050					1055
Arg	Val	Ser	Asp	Gly	Ile	Asp	Ser	Tyr	Glu	Leu	Pro	Ile	Trp	Pro Asp
			1060					1065					1070	
Met	Tyr	Glu	Gln	Gln	Glu	Leu	Leu	Glu	Glu	Asp	Arg	Leu	Ile	Tyr
		1075				1080					1085			
Ala	Ile	Leu	Val	Leu	Asp	Lys	Arg	Ser	Asp	Ser	Leu	Arg	Ile	Ser Cys
	1090					1095					1100			
Arg	Trp	Met	Lys	Asp	Leu	Ser	Ile	Val	Asn	Glu	Asn	Ile	Ile	Tyr Glu
1105					1110					1115				1120

Cys	Asp	Gln	Ala	Phe	Asp	Arg	Ile	Lys	Asn	Gln	Val	Gln	Lys	Met	Ser	
				1125					1130					1135		
Phe	Thr	Met	Ser	Thr	Ser	Gly	Lys	Glu	Thr	Lys	Ala	Lys	Gly	Asn	Lys	
			1140					1145					1150			
Pro	Asn	Glu	Asn	Gly	His	Thr	Gln	Ala	Leu	Ala	Pro	Val	Thr	Leu	Ser	
		1155					1160					1165				
Leu	Asp	Leu	Asn	Glu	Leu	Arg	His	Ser	His	Leu	Cys	Ile	Leu	Lys	Lys	
	1170					1175					1180					
Ile	Val	Gln	Lys	His	Pro	Gly	Ser	Arg	Thr	Leu	Val	Leu	Val	Phe	Thr	
1185					1190					1195					1200	
Gln	Asp	Asn	Glu	Arg	Val	Ala	Ser	Met	Ser	Pro	Asp	Asp	Ala	Tyr	Phe	
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Val	Cys	Glu	Asp	Ile	Glu	Glu	Leu	Arg	Gln	Glu	Leu	Val	Thr	Ala	Asp	
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Leu	Pro	Val	Arg	Val	Ile	Thr	Val									
	1235						1240									

<210> 523

<211> 576

<212> PRT

<213> Chlamydia pneumoniae

<400> 523

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Lys	Val	Asn	Pro 20	Asn	Phe	Phe	Glu	Arg 25	Asn	Pro	Lys	Val	Ala 30	Arg	Val
Leu	Gln	Ile 35	Thr	Ala	Val	Val	Leu 40	Gly	Ile	Ile	Ala	Leu 45	Leu	Ser	Gly
Ile	Val 50	Leu	Ile	Ile	Gly	Thr 55	Pro	Leu	Gly	Ala	Pro 60	Ile	Ser	Met	Ile
Leu 65	Gly	Gly	Cys	Leu	Leu 70	Ala	Ser	Gly	Gly	Ala 75	Leu	Phe	Val	Gly	Gly 80
Thr	Ile	Ala	Thr 85	Ile	Leu	Gln	Ala	Arg	Asn 90	Ser	Tyr	Lys	Lys 95	Ala	Val
Asn	Gln	Lys	Lys 100	Leu	Ser	Glu	Pro	Leu 105	Met	Glu	Arg	Pro	Glu 110	Leu	Lys
Ala	Leu	Asp 115	Tyr	Ser	Leu	Asp	Leu 120	Lys	Glu	Val	Trp	Asp 125	Leu	His	His
Ser	Val 130	Val	Lys	His	Leu	Lys 135	Lys	Leu	Asp	Leu 140	Asn	Leu	Ser	Lys	Thr
Gln 145	Arg	Glu	Val	Leu 150	Asn	Gln	Ile	Lys	Ile	Asp 155	Asp	Glu	Gly	Pro	Ser 160
Leu	Gly	Glu	Cys 165	Ala	Ala	Met	Ile	Ser	Glu 170	Asn	Tyr	Asp	Ala 175	Cys	Leu
Lys	Met	Leu 180	Ala	Tyr	Arg	Glu	Glu 185	Leu	Leu	Lys	Glu	Gln 190	Thr	Gln	Tyr
Gln	Glu 195	Thr	Arg	Phe	Asn	Gln 200	Asn	Leu	Thr	His	Arg	Asn 205	Lys	Val	Leu
Leu	Ser 210	Ile	Leu	Ser	Arg	Ile 215	Thr	Asp	Asn	Ile	Ser 220	Lys	Ala	Gly	Gly
Val 225	Phe	Ser	Leu	Lys	Phe 230	Ser	Thr	Leu	Ser	Ser 235	Arg	Met	Ser	Arg	Ile 240
His	Thr	Thr	Thr 245	Thr	Val	Ile	Leu	Ala 250	Leu	Ser	Ala	Val	Val 255	Ser	Val
Met	Val	Val	Ala 260	Ala	Leu	Ile	Pro	Gly 265	Gly	Ile	Leu	Ala 270	Leu	Pro	Ile
Leu	Leu 275	Ala	Val	Ala	Ile	Ser	Ala 280	Gly	Val	Ile	Val	Thr 285	Gly	Leu	Ser
Tyr	Leu 290	Val	Arg	Gln	Ile	Leu 295	Ser	Asn	Thr	Lys	Arg 300	Asn	Arg	Gln	Asp

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Phe Tyr Lys Asp Phe Val Lys Asn Val Asp Ile Glu Leu Leu Asn Gln
305          310          315
Thr Val Thr Leu Gln Arg Phe Leu Phe Glu Met Leu Lys Gly Val Leu
          325          330          335
Lys Glu Glu Glu Glu Val Ser Leu Glu Gly Gln Asp Trp Tyr Thr Gln
          340          345          350
Tyr Ile Thr Asn Ala Pro Ile Glu Lys Arg Leu Ile Glu Glu Ile Arg
          355          360          365
Val Thr Tyr Lys Glu Ile Asp Ala Gln Thr Lys Lys Met Lys Thr Asp
          370          375          380
Leu Glu Phe Leu Glu Asn Glu Val Arg Ser Gly Arg Leu Ser Val Ala
385          390          395          400
Ser Pro Ser Glu Asp Pro Ser Glu Thr Pro Ile Phe Thr Gln Gly Lys
          405          410          415
Glu Phe Ala Lys Leu Arg Arg Gln Thr Ser Gln Asn Ile Ser Thr Ile
          420          425          430
Tyr Gly Pro Asp Asn Glu Asn Ile Asp Pro Glu Phe Ser Leu Pro Trp
          435          440          445
Met Pro Lys Lys Glu Glu Glu Ile Asp His Ser Leu Glu Pro Val Thr
          450          455          460
Lys Leu Glu Pro Gly Ser Arg Glu Glu Leu Leu Leu Val Glu Gly Val
465          470          475          480
Asn Pro Thr Leu Arg Glu Leu Asn Met Arg Ile Ala Leu Leu Gln Gln
          485          490          495
Gln Leu Ser Ser Val Arg Lys Trp Arg His Pro Arg Gly Glu His Tyr
          500          505          510
Gly Asn Val Ile Tyr Ser Asp Thr Glu Leu Asp Arg Ile Gln Met Leu
          515          520          525
Glu Gly Ala Phe Tyr Asn His Leu Arg Glu Ala Gln Glu Glu Ile Thr
          530          535          540
Gln Ser Leu Gly Asp Leu Val Asp Ile Gln Asn Arg Ile Leu Gly Ile
545          550          555          560
Ile Val Glu Gly Asp Ser Asp Ser Arg Thr Glu Glu Glu Pro Gln Glu
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&lt;210&gt; 524

&lt;211&gt; 439

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;220&gt;

&lt;221&gt; VARIANT

&lt;222&gt; 428,429,430,431,432,433,434,435,437,438,439

&lt;223&gt; Xaa = Any Amino Acid

&lt;400&gt; 524

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          20          25          30
Leu Lys Ala Asn Leu Asn Leu Pro Phe Leu Asp Leu Ser Ser Thr Ser
          35          40          45
Gly Thr Val Asn Leu Asp Asp Phe Asn Pro Ile Pro Ser Ser Met Ala
          50          55          60
Ala Pro Asp Tyr Gly Tyr Gln Gly Ser Trp Thr Leu Val Pro Lys Val
65          70          75          80
Gly Ala Gly Gly Lys Val Thr Leu Val Ala Glu Trp Gln Ala Leu Gly
          85          90          95
Tyr Thr Pro Lys Pro Glu Leu Arg Ala Thr Leu Val Pro Asn Ser Leu
          100          105          110
Trp Asn Ala Tyr Val Asn Ile His Ser Ile Gln Gln Glu Ile Ala Thr

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Ala	Met	115	Ser	Asp	Ala	Pro	Ser	His	120	Pro	Gly	Ile	Trp	125	Ile	Gly	Gly	Ile
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145					150					155					160			
Leu	Ile	Ser	Arg	Gly	Tyr	Ile	Val	Gly	Gly	Ser	Met	Thr	Thr	Pro	Gln			
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Glu	Tyr	Thr	Phe	Ala	Val	Ala	Phe	Ser	Gln	Leu	Phe	Gly	Lys	Ser	Lys			
			180					185						190				
Asp	Tyr	Val	Val	Ser	Asp	Ile	Lys	Ser	Gln	Val	Tyr	Ala	Gly	Ser	Leu			
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Cys	Ala	Gln	Ser	Ser	Tyr	Val	Ile	Pro	Leu	His	Ser	Ser	Leu	Arg	Arg			
	210					215					220							
His	Val	Leu	Ser	Lys	Val	Leu	Pro	Glu	Leu	Pro	Gly	Glu	Thr	Pro	Leu			
225					230					235					240			
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Lys	His	Glu	Ser	Ala	Lys	Pro	Pro	Ser	Ala	Leu	Leu	Leu	Thr	Leu	Gly			
		340						345					350					
Tyr	Ala	Val	Asp	Ala	Tyr	Arg	Asp	His	Pro	His	Cys	Leu	Thr	Ser	Leu			
	355						360					365						
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Tyr	Asn	Ala	Asn	Cys	Gly	Thr	Arg	Tyr	Ser	Phe	Xaa	Xaa	Xaa	Xaa	Xaa			
		420						425						430				
Xaa	Xaa	Xaa	Phe	Xaa	Xaa	Xaa												
		435																

&lt;210&gt; 525

&lt;211&gt; 867

&lt;212&gt; DNA

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 525

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agcatccgaa	aagatggaac	atcagatgca	tacttcccc	cagaggtccc	tgcattagct	420
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&lt;210&gt; 526

&lt;211&gt; 1182

&lt;212&gt; DNA

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 526

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ggggctattc	tagtagtttc	tgcaacagac	ggagctatgc	ctcaaactaa	agagcatatt	360
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&lt;210&gt; 527

&lt;211&gt; 1650

&lt;212&gt; DNA

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 527

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&lt;210&gt; 528

&lt;211&gt; 300

&lt;212&gt; DNA

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 528

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&lt;210&gt; 529

&lt;211&gt; 615

&lt;212&gt; DNA

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 529

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&lt;210&gt; 530

&lt;211&gt; 1806

&lt;212&gt; DNA

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 530

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atggag						1806

&lt;210&gt; 531

&lt;211&gt; 972

&lt;212&gt; DNA

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 531

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cgtttagata	gattaaaaga	aaaaatttat	tccgatctca	ccccttgga	aagagtacaa	180
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tttgtagaac	tttgtggaga	tcgaacgttc	cgagatgatc	ctgcagttgt	cggagggttc	300
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gattctgagg	ca					972

&lt;210&gt; 532

&lt;211&gt; 1938

&lt;212&gt; DNA

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 532

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cttattgcta	agacaggctc	tgatacgttt	cttctttttg	ggaagcagga	gggagcttcc	180
ttagtcaaaa	ggaaagagct	gtccaaagat	caacttcttg	aacagtggga	taatattgtt	240
ggtgaggggag	acacgctatc	tttgccctcaa	gcgaatgctt	atattgcgaa	acattcagga	300
ggctctcagt	caataacaaa	aaggctttcc	gcctatctct	ctggttgttt	tgacttttct	360
cgtttgcaat	gcctcgcgct	ttttctagta	gttggtgcta	ttttgaaatc	aacaacgcta	420
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ctcaatgctg	tcgtaaaa					1938

&lt;210&gt; 533

&lt;211&gt; 1242

&lt;212&gt; DNA

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 533

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&lt;210&gt; 534

&lt;211&gt; 1212

&lt;212&gt; DNA

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 534

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taccttacga	aaagcaataa	aaaagcctct	tacattaact	tccttgttag	aagaccttat	180
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aaagatactc	tg					1212

&lt;210&gt; 535

&lt;211&gt; 1617

&lt;212&gt; DNA

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 535

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gcttctcttc	tacaaaaaaa	tattagacat	tcttcactta	ccgttcgagt	aattactatt	300
ttagctgtag	ggatggcgag	agactatcgg	ttagtgccta	ttgttttgca	ggctttgtct	360
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&lt;210&gt; 536

&lt;211&gt; 312

&lt;212&gt; DNA

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 536

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caagaaactt	ct					312

&lt;210&gt; 537

&lt;211&gt; 1008

&lt;212&gt; DNA

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 537

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&lt;210&gt; 538

&lt;211&gt; 1278

&lt;212&gt; DNA

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 538

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&lt;210&gt; 539

&lt;211&gt; 1815

&lt;212&gt; DNA

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 539

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&lt;210&gt; 540

&lt;211&gt; 519

&lt;212&gt; DNA

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 540

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gggaaaaaag	aatctgctga	attcgaaaag	atgaaaaacc	aattctctaa	cagcatgggg	180
aagatggagg	aagaactgtc	ttctatctat	tccaagctcc	aagacgacga	ttacatggaa	240
ggtctatccg	agaccgcagc	tgccgaatta	agaaaaaat	tcgaagatct	atctgcagaa	300
tacaacacag	ctcaagggca	gtattaccaa	atattaaacc	aaagtaatct	caagcgcagt	360
caaaagatta	tggaagaagt	gaaaaaagct	tctgaaactg	tgcgatttca	agaaggcttg	420
tcagtccttc	ttaacgaaga	tattgtctta	tctatcgata	gttcggcaga	taaaaccgat	480
gctgttatta	aagttcttga	tgattctttt	caaaataat			519

&lt;210&gt; 541

&lt;211&gt; 1062

&lt;212&gt; DNA

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 541

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gactcaggat	tcccagggtat	tcatccgaca	gccgttatcc	atccaactgc	gattattgaa	360
gatcatgttt	gtattgagcc	ctatgctgta	gtttgtcagc	atgctcatgt	tggatctgct	420
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&lt;210&gt; 542

&lt;211&gt; 1263

&lt;212&gt; DNA

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 542

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aaaaaaaaag	gagagaagtt	tgaatcatta	gaagctcgtc	gcaaaccaac	agcggataaa	240
gcagaaaaga	aatccgagag	cacagaggaa	aaaggcgata	ctcctcttga	agatcgtttc	300
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acgacaggaa	atttaactaa	aaccttctta	caattagtag	aagataaaatt	cccttcctct	960
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aatgaggatt	atcctaaacc	aggtgacttc	ccacgatctt	ccttctctag	tacgcctcct	1200
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ccc						1263

&lt;210&gt; 543

&lt;211&gt; 693

&lt;212&gt; DNA

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 543

atgatggagg	tgtttatgaa	tttttttagat	cagttagatt	taattattca	aaataagcat	60
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tttagggcat	cgcaagaagt	aacgcaatct	ttgtatggct	tttttagattc	ttttttggat	660
ccaggaaactt	gttgtagttg	tcatcaatct	tat			693

&lt;210&gt; 544

&lt;211&gt; 729

&lt;212&gt; DNA

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 544

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caggcaccta	atatggtcta	ccattcacat	cctacttctc	gagaagagta	ttgttctttg	660
cgcatagatg	aaacagagga	cttatacggg	ccttttttgc	aagcggttac	gtggagtcaa	720
gaaaagaaa						729

&lt;210&gt; 545

&lt;211&gt; 1149

&lt;212&gt; DNA

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 545

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atgagaaaa						1149

&lt;210&gt; 546

&lt;211&gt; 579

&lt;212&gt; DNA

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 546

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ggcttagagg	acataggttt	tgttgagtca	gagcctaaac	tgaatggccg	ttctttgatc	540
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&lt;210&gt; 547

&lt;211&gt; 3159

&lt;212&gt; DNA

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 547

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&lt;210&gt; 548

&lt;211&gt; 1038

&lt;212&gt; DNA

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 548

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gaacattatt	tgaatggctg	cgcaaataac	tggctcccta	cagagatccc	catggggaaa	180
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tttaaacatg	taactaatcc	ggaagcgaga	caatatcttt	taagacaagc	ttttgaagaa	360
gcggttcaca	cgcacacatt	tttgtatatt	tgtgagtcac	tcggattaga	cgagaaagaa	420
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acaatagacc	ttaataaaga	gaaaaacttc	tttgaaacaa	gggttataga	atatcaacat	1020
gcagcaagct	taacttgg					1038

&lt;210&gt; 549

&lt;211&gt; 978

&lt;212&gt; DNA

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 549

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&lt;210&gt; 550

&lt;211&gt; 438

&lt;212&gt; DNA

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 550

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tctaataatta	aaggcactct	aggatacgyt	gaaatctcta	accaactcta	tctctgtgat	300
cggcttaaca	tgacctatct	aaatggagaa	aagctcgccc	gttacttagt	tcttttttctg	360
cagcatgcca	atatctggat	gcaatctatc	tcaaaaaggag	cacttccaga	tttacatgct	420
ctaggtagtg	atcacctg					438

&lt;210&gt; 551

&lt;211&gt; 1581

&lt;212&gt; DNA

## &lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 551

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caacagatga	cacaagtgcg	ggagcatgcc	aattgcaaaa	gctgtctcat	caaaggggat	720
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&lt;210&gt; 552

&lt;211&gt; 1950

&lt;212&gt; DNA

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 552

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&lt;210&gt; 553

&lt;211&gt; 939

&lt;212&gt; DNA

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 553

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&lt;210&gt; 554

&lt;211&gt; 3711

&lt;212&gt; DNA

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 554

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&lt;210&gt; 555

&lt;211&gt; 1689

&lt;212&gt; DNA

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 555

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gataatcac						1689

&lt;210&gt; 556

&lt;211&gt; 5253

&lt;212&gt; DNA

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 556

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&lt;210&gt; 557

&lt;211&gt; 792

&lt;212&gt; DNA

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 557

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aaagttgggc	aaatgacaga	gccgtcaag	gaccagcaaa	taatccttgg	gacaaaaatca	120
acacctgtcg	cagccaaaat	gacagcttct	gatgggaatat	ctttaacagt	ctccaataat	180

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tattcattac gtgtaggcgg tttagaaagc ggtgtggtat gggttaatgc cttttctaatt 720
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caaacaaacg ct 792

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&lt;210&gt; 558

&lt;211&gt; 306

&lt;212&gt; DNA

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 558

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tctcccttag aactctacca taaaagtgtc tcaactaattc taggactgct tcaacaaata 180
gaaaactctt taggattatt cccagactct cctgttcttg aaaaattaga ggataacagt 240
ttaaagctaa aaaaggcttt gattatgctt atcttgtcta gaaaagacat gttttccaag 300
gctgaa 306

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&lt;210&gt; 559

&lt;211&gt; 729

&lt;212&gt; DNA

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 559

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caatccaatt tatcttctgg attgggggct agtgtcagaa ataaccaaaa aggcttgcac 120
gacatagtat acaaatcaaa cgatttaaaa tcaatcattt gcgaaacaaa aaaagatagt 180
gtggaccta ttctctgcatc atttttatcc gaacagttta gagaattgga tattcataga 240
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aagttaacgc atgaaatagc aaatattttg catatcgaat atgaacgaga ttactctcag 720
aggacaacg 729

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&lt;210&gt; 560

&lt;211&gt; 289

&lt;212&gt; PRT

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 560

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Met Thr His Gln His Lys Lys Ile Ser Glu Glu Thr Ile Ala Cys Asp
 1           5           10          15
Met Leu Glu Arg Tyr Thr Gly Ser Thr Val Gln Glu Phe Gln Pro Tyr
          20          25          30
Leu Leu Leu Thr Asn Phe Ala Tyr Tyr Val Asp Val Phe Ala Glu Ile
          35          40          45
Tyr Gln Val Pro Val Ser Arg Gly Ser Met Phe Ser Ala Ala His Ala
          50          55          60
Pro Gln Ile His Thr Ser Ile Ile Asp Phe Lys Leu Gly Ser Pro Gly
65          70          75          80

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[illegible]

<210> 561

<211> 394

&lt;212&gt; PRT

<213> C. Trachomatis D serovar

<400> 561

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Thr	Ile	Gly	His	Val	Asp	His	Gly	Lys 25	Thr	Thr	Leu	Thr	Ala 30	Ala	Ile
Thr	Arg	Ala 35	Leu	Ser	Gly	Asp	Gly 40	Leu	Ala	Asp	Phe	Arg 45	Asp	Tyr	Ser
Ser	Ile 50	Asp	Asn	Thr	Pro	Glu 55	Glu	Lys	Ala	Arg	Gly 60	Ile	Thr	Ile	Asn
Ala 65	Ser	His	Val	Glu	Tyr 70	Glu	Thr	Ala	Asn	Arg 75	His	Tyr	Ala	His	Val 80
Asp	Cys	Pro	Gly	His 85	Ala	Asp	Tyr	Val	Lys 90	Asn	Met	Ile	Thr	Gly 95	Ala
Ala	Gln	Met	Asp 100	Gly	Ala	Ile	Leu	Val 105	Val	Ser	Ala	Thr	Asp 110	Gly	Ala
Met	Pro	Gln 115	Thr	Lys	Glu	His	Ile 120	Leu	Leu	Ala	Arg	Gln 125	Val	Gly	Val
Pro	Tyr 130	Ile	Val	Val	Phe	Leu 135	Asn	Lys	Ile	Asp	Met 140	Ile	Ser	Glu	Glu
Asp 145	Ala	Glu	Leu	Val	Asp 150	Leu	Val	Glu	Met	Glu 155	Leu	Val	Glu	Leu	Leu 160
Glu	Glu	Lys	Gly	Tyr 165	Lys	Gly	Cys	Pro	Ile 170	Ile	Arg	Gly	Ser	Ala 175	Leu
Lys	Ala	Leu	Glu 180	Gly	Asp	Ala	Ala	Tyr 185	Ile	Glu	Lys	Val	Arg 190	Glu	Leu
Met	Gln	Ala 195	Val	Asp	Asp	Asn	Ile 200	Pro	Thr	Pro	Glu	Arg 205	Glu	Ile	Asp

Lys Pro Phe Leu Met Pro Ile Glu Asp Val Phe Ser Ile Ser Gly Arg  
 210 215 220  
 Gly Thr Val Val Thr Gly Arg Ile Glu Arg Gly Ile Val Lys Val Ser  
 225 230 235 240  
 Asp Lys Val Gln Leu Val Gly Leu Arg Asp Thr Lys Glu Thr Ile Val  
 245 250 255  
 Thr Gly Val Glu Met Phe Arg Lys Glu Leu Pro Glu Gly Arg Ala Gly  
 260 265 270  
 Glu Asn Val Gly Leu Leu Leu Arg Gly Ile Gly Lys Asn Asp Val Glu  
 275 280 285  
 Arg Gly Met Val Val Cys Leu Pro Asn Ser Val Lys Pro His Thr Gln  
 290 295 300  
 Phe Lys Cys Ala Val Tyr Val Leu Gln Lys Glu Glu Gly Gly Arg His  
 305 310 315 320  
 Lys Pro Phe Phe Thr Gly Tyr Arg Pro Gln Phe Phe Phe Arg Thr Thr  
 325 330 335  
 Asp Val Thr Gly Val Val Thr Leu Pro Glu Gly Ile Glu Met Val Met  
 340 345 350  
 Pro Gly Asp Asn Val Glu Phe Glu Val Gln Leu Ile Ser Pro Val Ala  
 355 360 365  
 Leu Glu Glu Gly Met Arg Phe Ala Ile Arg Glu Gly Gly Arg Thr Ile  
 370 375 380  
 Gly Ala Gly Thr Ile Ser Lys Ile Ile Ala  
 385 390

&lt;210&gt; 562

&lt;211&gt; 550

&lt;212&gt; PRT

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 562

Met Glu Ser Ser Arg Ile Leu Ile Thr Ser Ala Leu Pro Tyr Ala Asn  
 1 5 10 15  
 Gly Pro Leu His Phe Gly His Ile Thr Gly Ala Tyr Leu Pro Ala Asp  
 20 25 30  
 Val Tyr Ala Arg Phe Gln Arg Leu Gln Gly Lys Glu Val Leu Tyr Ile  
 35 40 45  
 Cys Gly Ser Asp Glu Tyr Gly Ile Ala Ile Thr Leu Asn Ala Glu Leu  
 50 55 60  
 Ala Gly Met Gly Tyr Gln Glu Tyr Val Asp Met Tyr His Lys Leu His  
 65 70 75 80  
 Lys Asp Thr Phe Lys Lys Leu Gly Ile Ser Val Asp Phe Phe Ser Arg  
 85 90 95  
 Thr Thr Asn Thr Tyr His Pro Ala Ile Val Gln Asp Phe Tyr Arg Asn  
 100 105 110  
 Leu Gln Glu Arg Gly Leu Val Glu Asn Gln Val Thr Glu Gln Leu Tyr  
 115 120 125  
 Ser Glu Glu Glu Gly Lys Phe Leu Ala Asp Arg Tyr Val Val Gly Thr  
 130 135 140  
 Cys Pro Lys Cys Gly Phe Asp Arg Ala Arg Gly Asp Glu Cys Gln Gln  
 145 150 155 160  
 Cys Gly Ala Asp Tyr Glu Ala Arg Asp Leu Lys Glu Pro Arg Ser Lys  
 165 170 175  
 Leu Thr Gly Ala Ala Leu Ser Leu Arg Asp Thr Glu His Ala Tyr Leu  
 180 185 190  
 His Leu Glu Arg Met Lys Glu Asp Leu Leu Ala Phe Val Gln Gly Ile  
 195 200 205  
 Tyr Leu Arg Pro His Met Arg Asn Phe Val Thr Asp Tyr Ile Glu His  
 210 215 220  
 Leu Arg Pro Arg Ala Val Thr Arg Asp Leu Ser Trp Gly Ile Pro Val  
 225 230 235 240

Pro Gly	Asp Tyr	Leu Ile	Glu Ser	Asn Gly	Lys Thr	Val Met	Phe Asp	Tyr Trp	Val Ala	Trp Ala	Phe Ser	Asp Ile	Ala Gly	Pro Asp	Ile Pro
			260	245				250					270	255	
Glu Phe	Ala Ile	Trp Gly	Lys Lys	Lys Asp	Phe Asn	Trp Thr	Leu Ser	Asp Phe	Asp His	Thr Ala	Val Ala	Thr Ile	Tyr Phe	Ala Pro	Gln Ala
			275				280					285			
Met 305	Glu Thr	Ile Ser	Gly Glu	Gln Phe	Ser Leu	Leu Leu	Pro Glu	Tyr Gly	Lys Phe	Lys Gln	Val Phe	Asp Ser	Ala Lys	Leu Ser	Val Asp
				325					330				335		
Gly Lys	Asn Leu	Phe Arg	Ile Tyr	Asp Val	Met Leu	Asp Ala	Ala Ala	Phe Ile	Leu Ala	Glu Pro	Thr Glu	Tyr Thr	Ser Ser	Leu Asp	Asp Ser
			340				360					365			
Glu Gly	Phe Lys	Ser Tyr	Phe Gly	Gln Asn	Glu Phe	Phe Val	Lys Asn	Thr Arg	Arg Val	Cys Leu	Asn Ala	Ser Phe	Glu Ala	Leu Val	Val Lys
			370			390				395					400
Asn Asp	Gly Phe	Cys Ile	Thr Ser	Glu Lys	Leu Ser	Ser Gln	Ser Lys	Pro Leu	Gln Ala	Leu Lys	Glu Asp	Gln Ala	Lys Ala	Asp Glu	Leu His
			405						410				415		
Tyr Ala	Ala Leu	Gln Leu	Tyr Gly	Ser Asn	Leu Gly	Arg Tyr	Lys Phe	Ala Asn	Cys Asp	Ser Glu	Thr Ala	Ile Pro	Met Trp	Glu Lys	Leu Leu
			435				440					445			
Ala 465	Lys Cys	Glu Tyr	Gly Cys	Asn Gln	Trp Lys	Asn Leu	Arg Ala	Val Leu	Arg Ile	Ala Ser	Ile Tyr	Leu Pro	Phe Ile	Cys Met	Ala Pro
				470					475				480		
Cys Glu	Tyr Thr	Cys Ala	Gln Leu	Lys Lys	Leu Ile	Leu Leu	Ala Glu	Leu Met	Ile Ile	Ser Ala	Tyr Pro	Pro His	Ile Ser	Met Leu	Pro Asp
			485					490					495		
Leu Phe	Gly Phe	Ser Asp	Gln Tyr	Asp Ser	Pro Glu	Asp Glu	Arg Lys	Leu Phe	Gln Ser	Ser Leu	Leu Lys	Trp Glu	Thr Pro	Asp Glu	Ser Leu
			515				520					525			
Leu 545	Phe Thr	Asp Met	Tyr Val	Ser Glu	Glu Val	Glu Glu	Lys Glu	Phe Glu	Ser Ser	Leu Ser	Lys Lys	Glu Glu	Pro Pro	Glu Glu	Leu Leu
				535							540				

<210> 563

 $\langle 211 \rangle$  100

<212> PRT

<213> C. Trachomatis D serovar

<400> 563

[illegible]

<210> 564  
 <211> 205  
 <212> PRT  
 <213> C. Trachomatis D serovar

<400> 564  
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 Phe Pro Lys Leu Phe Ile Ile Ser Ala Pro Ala Gly Ala Gly Lys Thr  
 20 25 30  
 Thr Leu Thr His Met Leu Gln Arg Glu Phe Pro Asp Ala Phe Glu Lys  
 35 40 45  
 Thr Val Ser Ser Thr Thr Arg Ser Ala Arg Pro Gly Glu Val His Gly  
 50 55 60  
 Val Asp Tyr Leu Phe Val Ser Glu Asp Asp Phe Lys Gln Ser Leu Asp  
 65 70 75 80  
 Arg Glu Asp Phe Leu Glu Trp Val Phe Leu Phe Gly Thr Tyr Tyr Gly  
 85 90 95  
 Thr Ser Lys Ala Glu Ile Ser Arg Val Leu Gln Lys Gly Lys His Cys  
 100 105 110  
 Ile Ala Val Ile Asp Val Gln Gly Ala Leu Ala Leu Lys Lys Gln Met  
 115 120 125  
 Pro Ala Val Thr Ile Phe Ile Gln Ala Pro Ser Gln Glu Glu Leu Glu  
 130 135 140  
 Arg Arg Leu Asn Ala Arg Asp Ser Glu Lys Asp Phe Gln Lys Lys Glu  
 145 150 155 160  
 Arg Leu Glu His Ser Ala Val Glu Ile Ala Ala Ala Ser Glu Phe Asp  
 165 170 175  
 Tyr Val Val Val Asn Asp Asp Leu Ile Thr Ala Tyr Gln Val Leu Arg  
 180 185 190  
 Ser Ile Phe Ile Ala Glu Glu His Arg Met Ser His Gly  
 195 200 205

<210> 565  
 <211> 602  
 <212> PRT  
 <213> C. Trachomatis D serovar

<400> 565  
 Met Lys Pro Tyr Lys Ile Glu Asn Ile Arg Asn Phe Ser Ile Ile Ala  
 1 5 10 15  
 His Ile Asp His Gly Lys Ser Thr Ile Ala Asp Arg Leu Leu Glu Ser  
 20 25 30  
 Thr Ser Thr Ile Glu Gln Arg Glu Met Arg Glu Gln Leu Leu Asp Ser  
 35 40 45  
 Met Asp Leu Glu Arg Glu Arg Gly Ile Thr Ile Lys Ala His Pro Val  
 50 55 60  
 Thr Met Thr Tyr Glu Tyr Glu Gly Glu Thr Tyr Glu Leu Asn Leu Ile  
 65 70 75 80  
 Asp Thr Pro Gly His Val Asp Phe Ser Tyr Glu Val Ser Arg Ser Leu  
 85 90 95  
 Ala Ala Cys Glu Gly Ala Leu Leu Ile Val Asp Ala Ala Gln Gly Val  
 100 105 110  
 Gln Ala Gln Ser Leu Ala Asn Val Tyr Leu Ala Leu Glu Arg Asp Leu  
 115 120 125  
 Glu Ile Ile Pro Val Leu Asn Lys Ile Asp Leu Pro Ala Ala Gln Pro  
 130 135 140  
 Glu Ala Ile Lys Lys Gln Ile Glu Glu Phe Ile Gly Leu Asp Thr Ser  
 145 150 155 160  
 Asn Thr Ile Ala Cys Ser Ala Lys Thr Gly Gln Gly Ile Pro Glu Ile

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<210> 566
<211> 324
<212> PRT
<213> C. Trachomatis D serovar
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&lt;400&gt; 566

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Met Glu Leu Leu Pro His Glu Lys Gln Val Val Glu Tyr Glu Lys Thr
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Ile Ala Glu Phe Lys Glu Lys Asn Lys Glu Asn Ser Leu Leu Ser Ser
          20          25          30
Ser Glu Ile Gln Lys Leu Asp Lys Arg Leu Asp Arg Leu Lys Glu Lys
          35          40          45
Ile Tyr Ser Asp Leu Thr Pro Trp Glu Arg Val Gln Ile Cys Arg His
          50          55          60
Pro Ser Arg Pro Arg Thr Val Asn Tyr Ile Glu Gly Met Cys Glu Glu
          65          70          75          80
Phe Val Glu Leu Cys Gly Asp Arg Thr Phe Arg Asp Asp Pro Ala Val
          85          90          95
Val Gly Gly Phe Ala Lys Ile Gln Gly Gln Arg Phe Met Leu Ile Gly
          100          105          110
Gln Glu Lys Gly Cys Asp Thr Lys Ser Arg Met His Arg Asn Phe Gly
          115          120          125
Met Leu Cys Pro Glu Gly Phe Arg Lys Ala Leu Arg Leu Ala Lys Met
          130          135          140
Ala Glu Lys Phe Gly Leu Pro Ile Ile Phe Leu Val Asp Thr Pro Gly
          145          150          155          160
Ala Phe Pro Gly Leu Thr Ala Glu Glu Arg Gly Gln Gly Trp Ala Ile
          165          170          175
Ala Thr Asn Leu Phe Glu Leu Ala Arg Leu Ala Thr Pro Ile Ile Val
          180          185          190
Ile Val Ile Gly Glu Gly Cys Ser Gly Gly Ala Leu Gly Met Ala Ile
          195          200          205
Gly Asp Val Val Ala Met Leu Glu His Ser Tyr Tyr Ser Val Ile Ser
          210          215          220
Pro Glu Gly Cys Ala Ser Ile Leu Trp Lys Asp Pro Lys Lys Asn Ser
          225          230          235          240
Asp Ala Ala Ala Met Leu Lys Met His Gly Glu Asp Leu Lys Gly Phe
          245          250          255
Ala Ile Val Asp Ala Val Ile Lys Glu Pro Ile Gly Gly Ala His His
          260          265          270
Asn Pro Ala Ala Thr Tyr Arg Ser Val Gln Glu Tyr Val Leu Gln Glu
          275          280          285
Trp Leu Lys Leu Lys Asp Leu Pro Val Glu Glu Leu Leu Glu Lys Arg
          290          295          300
Tyr Gln Lys Phe Arg Thr Ile Gly Leu Tyr Glu Thr Ser Ser Glu Ser
          305          310          315          320
Asp Ser Glu Ala

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&lt;210&gt; 567

&lt;211&gt; 646

&lt;212&gt; PRT

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 567

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Met Lys Leu Leu Leu Lys Ala Ile Leu Arg His Lys Lys His Leu Val
 1          5          10          15
Leu Phe Gly Phe Ser Leu Leu Ser Ile Leu Gly Leu Thr Ile Thr Ser
          20          25          30
Gln Ala Glu Ile Phe Ser Leu Gly Leu Ile Ala Lys Thr Gly Pro Asp
          35          40          45
Thr Phe Leu Leu Phe Gly Lys Gln Glu Gly Ala Ser Leu Val Lys Arg
          50          55          60
Lys Glu Leu Ser Lys Asp Gln Leu Leu Glu Gln Trp Asp Asn Ile Val
          65          70          75          80
Gly Glu Gly Asp Thr Leu Ser Leu Pro Gln Ala Asn Ala Tyr Ile Ala

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				85					90				95				
Lys	His	Ser	Gly	Gly	Ser	Gln	Ser	Ile	Thr	Lys	Arg	Leu	Ser	Ala	Tyr		
			100					105					110				
Leu	Ser	Gly	Cys	Phe	Asp	Phe	Ser	Arg	Leu	Gln	Cys	Leu	Ala	Leu	Phe		
		115					120					125					
Leu	Val	Val	Val	Ala	Ile	Leu	Lys	Ser	Thr	Thr	Leu	Phe	Phe	Gln	Arg		
		130				135					140						
Phe	Leu	Ala	Gln	Leu	Ile	Ala	Ile	Arg	Val	Ser	Cys	Ser	Leu	Arg	Lys		
145				150				155							160		
Asp	Tyr	Phe	Leu	Ala	Leu	Gln	Thr	Leu	Pro	Met	Thr	Phe	Phe	His	Ala		
			165					170						175			
His	Asp	Met	Gly	Asn	Leu	Ser	Ser	Arg	Val	Ile	Ala	Asp	Ser	Ser	Met		
			180					185					190				
Ile	Ala	Leu	Ala	Ile	Asn	Ala	Leu	Met	Val	Asn	Tyr	Ile	Gln	Ala	Pro		
		195				200						205					
Ile	Thr	Met	Thr	Leu	Ala	Leu	Val	Val	Cys	Leu	Ser	Ile	Ser	Trp	Lys		
	210			215							220						
Phe	Cys	Ala	Cys	Val	Cys	Leu	Ala	Phe	Pro	Ile	Phe	Ile	Leu	Pro	Ile		
225				230				235							240		
Val	Ile	Ile	Ala	Lys	Lys	Val	Lys	Ala	Leu	Ala	Lys	Arg	Ile	Gln	Lys		
			245					250						255			
Ser	Gln	Asp	His	Ser	Ala	Ala	Ala	Leu	Leu	Asp	Phe	Leu	Leu	Gly	Ile		
		260						265					270				
Leu	Thr	Val	Lys	Val	Phe	Arg	Thr	Glu	Gln	Phe	Ser	Phe	Ser	Lys	Tyr		
	275					280						285					
Cys	Gln	Lys	Asn	Asp	Glu	Ile	Ala	Arg	Leu	Glu	Glu	Arg	Ser	Ala	Ala		
	290				295					300							
Tyr	Ser	Leu	Ile	Pro	Arg	Pro	Leu	Leu	His	Thr	Ile	Ala	Ser	Leu	Phe		
305				310						315					320		
Phe	Ala	Leu	Val	Ile	Met	Ile	Gly	Leu	Tyr	His	Phe	His	Ile	Pro	Pro		
			325					330						335			
Glu	Glu	Leu	Val	Val	Phe	Cys	Gly	Leu	Leu	Tyr	Leu	Ile	Tyr	Asp	Pro		
		340					345						350				
Ile	Lys	Lys	Phe	Ala	Asp	Glu	Asn	Ala	Asn	Ile	Met	Trp	Gly	Cys	Ala		
	355					360						365					
Ala	Ala	Glu	Arg	Phe	Tyr	Glu	Val	Leu	Asp	Leu	Ala	Lys	Gln	Gln	Ser		
	370					375					380						
Asn	Val	Ser	Glu	Lys	Leu	Asn	Glu	Phe	Gln	Gly	Leu	Gln	His	Ser	Ile		
385				390						395					400		
Gln	Phe	Cys	Asn	Val	Ser	Phe	Gly	Tyr	Val	Glu	Asp	Ser	Pro	Val	Leu		
			405					410						415			
Ser	Asp	Phe	Asn	Leu	Val	Leu	Lys	Lys	Gly	Glu	Ala	Ile	Gly	Ile	Val		
			420					425					430				
Gly	Pro	Thr	Gly	Ser	Gly	Lys	Ser	Thr	Ile	Ala	Lys	Leu	Leu	Pro	Arg		
	435					440						445					
Leu	Tyr	Glu	Val	Ser	His	Gly	Glu	Leu	Leu	Ile	Asp	Ser	Leu	Pro	Ile		
	450					455					460						
Arg	Ser	Tyr	Cys	Lys	Asn	Ser	Leu	Arg	Lys	His	Ile	Gly	Cys	Val	Leu		
465				470						475					480		
Gln	His	Pro	Phe	Leu	Phe	Tyr	Asp	Thr	Val	Trp	Asn	Asn	Leu	Thr	Cys		
			485					490						495			
Gly	Arg	Thr	Phe	Ser	Glu	Glu	Glu	Val	Phe	His	Ala	Leu	Lys	Gln	Ala		
		500					505						510				
His	Ala	Tyr	Glu	Phe	Val	Ser	Lys	Met	Pro	Gln	Gly	Val	His	Ser	Leu		
	515					520						525					
Leu	Glu	Glu	Ser	Ser	Lys	Asn	Leu	Ser	Gly	Gly	Gln	Gln	Gln	Arg	Leu		
	530					535					540						
Thr	Ile	Ala	Arg	Ala	Leu	Leu	His	Asn	Thr	Ser	Ile	Leu	Leu	Leu	Asp		
545				550						555					560		
Glu	Ala	Thr	Ser	Ala	Leu	Asp	Ala	Ile	Ser	Glu	Asn	Tyr	Val	Lys	Glu		
				565				570						575			

Ile	Val	Gly	Gln	Leu	Lys	Gly	Arg	Cys	Thr	Gln	Ile	Ile	Ile	Ala	His
			580					585						590	
Lys	Leu	Ser	Thr	Leu	Glu	Tyr	Val	Asp	Arg	Ile	Val	Tyr	Leu	Glu	Gln
		595					600					605			
Gly	Lys	Lys	Ile	Ala	Glu	Gly	Thr	Lys	Glu	Glu	Leu	Leu	Asp	Ser	Cys
	610					615					620				
Pro	Ala	Phe	Gln	Arg	Met	Trp	Val	Leu	Ser	Gly	Ala	Lys	Asp	Trp	Glu
625					630					635					640
Leu	Asn	Ala	Val	Val	Lys										
				645											

&lt;210&gt; 568

&lt;211&gt; 414

&lt;212&gt; PRT

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 568

Met	Phe	Ser	Ser	Ala	Ile	Val	Ile	Leu	Thr	Ala	Ile	Phe	Val	Leu	Cys
1				5					10					15	
Ser	Gly	Phe	Val	Ser	Leu	Ser	His	Ile	Ala	Leu	Phe	Ser	Leu	Pro	Ser
			20				25						30		
Ser	Leu	Ile	Ala	His	Tyr	Ser	His	Ser	Lys	Asn	Arg	Gln	Leu	Arg	Gln
		35					40					45			
Ile	Ala	Asn	Leu	Met	Ala	Tyr	Pro	Asn	His	Leu	Leu	Met	Thr	Leu	Val
	50					55					60				
Phe	Phe	Asp	Ile	Gly	Ile	Asn	Ile	Gly	Val	Gln	Asn	Cys	Ile	Ala	Thr
65					70					75					80
Leu	Val	Gly	Asp	Ser	Ala	Ser	Leu	Leu	Leu	Thr	Val	Gly	Val	Pro	Leu
			85						90					95	
Ala	Leu	Thr	Leu	Val	Leu	Gly	Glu	Ile	Val	Pro	Lys	Val	Ile	Ala	Ile
			100					105					110		
Pro	Tyr	Asn	Ala	Arg	Ile	Ala	Lys	Ile	Val	Thr	Pro	Ile	Ile	Phe	Ala
		115					120					125			
Ser	Thr	Lys	Ser	Phe	Arg	Pro	Ile	Phe	Asp	Trp	Ala	Ile	Ser	Gly	Ile
		130				135					140				
Asn	Phe	Ile	Val	Gln	Lys	Met	Leu	Ala	Arg	Gln	Glu	Ser	Asp	Phe	Ile
145					150					155					160
Gln	Pro	Gln	Glu	Leu	Lys	Glu	Val	Leu	Arg	Ser	Cys	Lys	Asp	Phe	Gly
				165					170					175	
Val	Val	Asn	His	Glu	Glu	Ser	Arg	Leu	Leu	Phe	Gly	Tyr	Leu	Ser	Met
			180					185					190		
Glu	Glu	Gly	Ser	Ile	Lys	Glu	Arg	Met	Thr	Pro	Lys	Gln	Glu	Ile	Ile
		195					200					205			
Phe	Tyr	Asp	Val	Leu	Thr	Pro	Ile	Glu	Asn	Leu	Tyr	Lys	Leu	Phe	Ser
	210					215					220				
Gly	Pro	Lys	Gln	Ser	Tyr	Ser	Lys	Val	Leu	Val	Cys	Lys	Gly	Gly	Leu
225					230					235					240
Gln	Asn	Leu	Leu	Gly	Val	Cys	Ser	Ala	Lys	Leu	Leu	Leu	Leu	Tyr	Lys
				245					250					255	
Glu	Lys	Leu	Gln	Ser	Ala	Glu	Glu	Leu	Pro	Leu	Leu	Arg	Lys	Pro	
			260					265					270		
His	Tyr	Ile	Pro	Glu	Thr	Val	Ser	Ala	Lys	Thr	Ala	Leu	Tyr	His	Leu
		275					280					285			
Ala	Gly	Glu	Asp	Cys	Gly	Leu	Gly	Ile	Ile	Ile	Asp	Glu	Tyr	Gly	Ser
	290					295					300				
Ile	Glu	Gly	Leu	Ile	Thr	Gln	Asn	Asp	Leu	Phe	Lys	Ile	Val	Ser	Asp
305					310					315					320
Gly	Val	Ala	His	Asn	Arg	Pro	Ser	Phe	Lys	Gln	Phe	Ala	His	Ser	Asp
				325					330					335	
Lys	Asn	Val	Val	Ile	Ala	Ala	Gly	Thr	Tyr	Glu	Leu	Ser	Asp	Phe	Tyr
			340					345					350		

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Asp Leu Phe Gly Val Asp Leu Pro Thr Thr Ala Asn Cys Val Thr Ile
      355      360      365
Gly Gly Trp Leu Thr Glu Gln Leu Gly Glu Ile Pro Glu Thr Gly Thr
      370      375      380
Lys Phe Ala Trp Gly Gln Phe Val Phe Gln Ile Leu Asp Ala Ala Pro
385      390      395      400
Asn Cys Val Lys Arg Val Tyr Ile Arg Lys Thr His Gly Asn
      405      410

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&lt;210&gt; 569

&lt;211&gt; 404

&lt;212&gt; PRT

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 569

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Met Glu Thr Asn Ser Pro Phe Phe Trp Leu Gly Val Asn Leu Leu Cys
 1      5      10      15
Ile Phe Val Gln Gly Phe Phe Ser Met Met Glu Met Ala Cys Ile Ser
      20      25      30
Phe Asn Arg Val Arg Leu Gln Tyr Tyr Leu Thr Lys Ser Asn Lys Lys
      35      40      45
Ala Ser Tyr Ile Asn Phe Leu Val Arg Arg Pro Tyr Arg Leu Phe Gly
      50      55      60
Thr Val Met Leu Gly Val Asn Ile Ala Leu Gln Ile Gly Ser Glu Ser
65      70      75      80
Ser Arg Thr Cys Tyr Lys Leu Leu Gly Ile Ser Pro Glu Tyr Ala Pro
      85      90      95
Ala Thr Gln Ile Ile Leu Val Val Ile Phe Ala Glu Leu Ile Pro Leu
      100      105      110
Ala Ile Ser Arg Lys Ile Pro Glu Lys Ile Ala Leu Lys Gly Ala Pro
      115      120      125
Ile Leu Tyr Phe Ala His Tyr Leu Phe Tyr Pro Leu Ile Gln Cys Val
      130      135      140
Gly Gly Ile Thr Asn Met Ile Tyr Phe Ile Leu Asn Ile Lys Glu Glu
145      150      155      160
Thr Leu His Ser Thr Leu Ser Arg Asp Glu Leu Gln Lys Thr Leu Glu
      165      170      175
Thr His His Glu Glu His Asp Phe Asn Val Ile Ala Thr Asn Ile Phe
      180      185      190
Ser Leu Ser Ala Thr Ser Val Glu Gln Val Cys Gln Tyr Leu Asp Gln
      195      200      205
Ile Pro Ile Leu Ser Ala Thr Ala Ser Val Arg Asp Val Cys Gln Leu
      210      215      220
Val Arg Arg His Arg Leu Asp Phe Val Pro Val Tyr His Lys Val Lys
225      230      235      240
Lys Asn Val Val Gly Ile Ala Phe Pro Lys Asn Leu Ile Asn Arg Asn
      245      250      255
Pro Ser Asp Pro Val Val Pro Tyr Leu Ser Ser Pro Trp Phe Ile Thr
      260      265      270
Ala Lys Ser Lys Leu Ile His Ala Ile Gln Glu Phe Arg Lys Asn Ser
      275      280      285
Ser Asn Val Ala Ile Val Leu Asn Asn Asn Gly Glu Pro Met Gly Val
      290      295      300
Leu Gly Leu His Thr Val Phe Lys Thr Leu Phe Asn Thr Arg Asn Ile
305      310      315      320
Ala Gln Leu Lys Pro Lys Pro Thr Ser Leu Ile Glu Arg Thr Phe Ser
      325      330      335
Gly Asn Thr Pro Leu Ser Glu Ile Glu Asn Glu Leu Asp Ile Ile Phe
      340      345      350
Met Asp Asn Asp Cys Thr Thr Ile Glu Gln Leu Met Leu Lys Leu Leu
      355      360      365

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Asp Thr Pro Pro Glu Val Gly Ala Ser Ile Ile Ile Asn Asp Leu Leu  
 370 375 380  
 Leu Glu Val Lys Glu Ile Ser Leu Tyr Gly Ile Lys Thr Val Ala Ile  
 385 390 395 400  
 Lys Asp Thr Leu

<210> 570

<211> 539

<212> PRT

<213> C. Trachomatis D serovar

<400> 570

Met Cys Cys Val Asp Gly Ser Asn Ser Ile Gln Gln Arg Met Arg Phe  
 1 5 10 15  
 Cys Glu Tyr Arg Thr Ala Ala Gln Glu Ala Lys Thr Ser Leu Ser Ser  
 20 25 30  
 Asp Cys Ser Leu Leu Glu Ala Arg Leu Ala Leu Arg Ala Leu Lys  
 35 40 45  
 His His Glu Tyr Ser Ala Trp Arg Glu Ala Phe Leu Arg Ser Gln Glu  
 50 55 60  
 Arg Phe Pro Ser Leu Glu Ala Asp Arg Asp Ile His Glu Asp Leu Ala  
 65 70 75 80  
 Ala Ser Leu Leu Gln Lys Asn Ile Arg His Ser Ser Leu Thr Val Arg  
 85 90 95  
 Val Ile Thr Ile Leu Ala Val Gly Met Ala Arg Asp Tyr Arg Leu Val  
 100 105 110  
 Pro Ile Val Leu Gln Ala Leu Ser Asp Asp Ser Asp Thr Val Arg Glu  
 115 120 125  
 Ile Ala Val Gln Val Ala Val Met Tyr Gly Ser Ser Cys Leu Leu Arg  
 130 135 140  
 Ala Val Gly Asp Leu Ala Lys Asn Asp Ser Ser Ile Gln Val Arg Ile  
 145 150 155 160  
 Thr Ala Tyr Arg Ala Ala Val Leu Glu Ile Gln Asp Leu Val Pro  
 165 170 175  
 His Leu Arg Val Val Val Gln Asn Thr Gln Leu Asp Gly Thr Glu Arg  
 180 185 190  
 Arg Glu Ala Trp Arg Ser Leu Cys Val Leu Thr Arg Pro His Ser Gly  
 195 200 205  
 Val Leu Thr Gly Ile Asp Gln Ala Leu Met Thr Cys Glu Met Leu Lys  
 210 215 220  
 Glu Tyr Pro Glu Lys Cys Thr Glu Glu Gln Ile Arg Thr Leu Leu Ala  
 225 230 235 240  
 Ala Asp His Pro Glu Val Gln Val Ala Thr Leu Gln Ile Ile Leu Arg  
 245 250 255  
 Gly Gly Arg Val Phe Arg Ser Ser Ser Ile Met Glu Ser Val Gln Lys  
 260 265 270  
 Leu Ala Cys Asn Ser Leu Ser Ala Arg Val Gln Met Gln Ala Ala Ala  
 275 280 285  
 Ile Leu Tyr Leu Glu Gly Asp Pro Phe Gly Glu Asp Lys Leu Thr Glu  
 290 295 300  
 Gly Leu Ser Ala Thr Ser Ser Ile Leu Cys Glu Ala Ala Ser Glu Ala  
 305 310 315 320  
 Val Cys Ser Leu Gly Ile His Gly Val His Leu Ala Gly Arg Phe Leu  
 325 330 335  
 Ser Lys Val Gln Gly Met Arg Ser Arg Val Asn Leu Ala Phe Ala Leu  
 340 345 350  
 Leu Val Ser Arg Glu Lys Val Glu Glu Ala Gly Asp Val Val Ala Ser  
 355 360 365  
 Phe Ile His Arg Ile Glu Pro Cys Arg Ala Ile Glu Gln Phe Leu Cys  
 370 375 380

Glu Asp Gln Lys Ile Phe Val Ala Ser Ser Pro Leu Gln Val Glu Ile  
 385 390 395 400  
 Met Lys Arg Asp Leu Ala Lys Lys Ile Ile Arg Leu Leu Val Ala Ala  
 405 410 415  
 Gln Tyr Ser Lys Ala Lys Met Val Val Ala Gln Tyr Leu Ala Gly Gln  
 420 425 430  
 Gln Val Gly Trp Ser Phe Cys Ser Glu Val Phe Trp Glu Glu Gly Asp  
 435 440 445  
 Ser Glu Asp Phe Val Glu Pro Leu Gln Glu Glu Ser Phe Ala Phe Ala  
 450 455 460  
 Leu Glu Lys Ala Leu Ser Phe Leu Gln Arg Glu Gly Gly Glu Ala Gly  
 465 470 475 480  
 Leu His Ala Val Ile Ser Leu Tyr Pro His Ser Arg Trp Gln Asp Lys  
 485 490 495  
 Leu Thr Ile Leu Glu Ala Ile Ala Tyr Ser Glu Asn Arg Ile Ala Thr  
 500 505 510  
 Cys Phe Leu Arg Glu Arg Cys Leu Gln Glu Ala Ala Ser Leu Gln Ser  
 515 520 525  
 Ala Ala Ala Gly Ala Val Phe Ala Leu Phe Lys  
 530 535

&lt;210&gt; 571

&lt;211&gt; 104

&lt;212&gt; PRT

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 571

Met Gln Thr Ser Arg Ile Ser Ser Phe Phe Arg Gly Leu Val His Leu  
 1 5 10 15  
 Tyr Arg Trp Ala Ile Ser Pro Phe Leu Gly Ala Pro Cys Arg Phe Phe  
 20 25 30  
 Pro Thr Cys Ser Glu Tyr Ala Leu Val Ala Leu Lys Lys His Pro Leu  
 35 40 45  
 Arg Lys Ser Leu Phe Leu Ile Ala Lys Arg Leu Leu Lys Cys Gly Pro  
 50 55 60  
 Trp Cys Ile Gly Gly Ile Asp Leu Val Pro Arg Thr Ser Val Glu Glu  
 65 70 75 80  
 Tyr Leu Ser Ser Pro Thr Pro Leu Ala Glu Ser Pro Asp Asp Arg Thr  
 85 90 95  
 Val Pro His Thr Gln Glu Thr Ser  
 100

&lt;210&gt; 572

&lt;211&gt; 336

&lt;212&gt; PRT

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 572

Met Gln Leu Phe Phe Gly Arg Phe Tyr Glu Val Ala Cys Ile Val Ala  
 1 5 10 15  
 Ser Ile Leu Arg Glu Arg Asp Val Gly Val Phe Met Gly Ile Glu Gly  
 20 25 30  
 Arg Gly Ser Gly Ala Met Gln Ser Lys Lys Thr Ile Lys Trp Leu Lys  
 35 40 45  
 Gln Ala Leu Val Leu Ser Ser Ile Val Asn Ile Leu Leu Leu Leu Leu  
 50 55 60  
 Ile Tyr Ser Thr Val Phe Arg Lys Asp Ile Tyr Lys Leu Arg Val Phe  
 65 70 75 80  
 Pro Gly Asn Leu Ile Ala Lys Ser Ser Arg Ile Gly Lys Ile Pro Glu  
 85 90 95  
 Asp Ile Leu Glu Arg Leu Glu Asn Ala Ser Phe Ala Asp Leu Leu Ala

Leu	Leu	Gln	100	Glu	Glu	Arg	Met	Val	105	Phe	Gly	His	Pro	Leu	110	Lys	Ser	Trp
		115						120							125			
Ala	Leu	Gly	Val	Ser	Ile	Gln	Lys	Tyr	Phe	Val	Asp	Ile	Ala	Pro	Met			
	130					135					140							
Leu	Thr	His	Pro	Leu	Thr	Phe	Ile	Arg	Leu	Lys	Ser	Pro	Glu	Arg	Thr			
145					150					155					160			
Trp	Leu	Leu	Pro	Asp	Ile	Asn	Asp	Gln	Glu	Phe	Thr	Arg	Ile	Cys	Gln			
			165					170						175				
Tyr	Leu	Leu	Thr	Glu	Arg	Phe	Pro	Phe	Ser	Ser	Arg	Gly	Phe	Phe	Arg			
			180					185						190				
Ile	Met	Val	Arg	Asp	Cys	Glu	Ala	Gly	Met	Val	Asp	Glu	Asp	Val	Leu			
	195						200					205						
Tyr	Arg	Phe	Cys	His	Leu	Pro	Glu	Phe	Leu	Tyr	Val	Arg	Ser	Leu	Leu			
	210					215					220							
Phe	Gly	Ala	Glu	Ile	Glu	Ala	Ala	Ser	Val	Ala	Ser	Leu	Ala	Arg	Met			
225					230				235					240				
Ile	Ile	Gln	Gly	Gly	Glu	Asp	Leu	Phe	Phe	Ser	Leu	Cys	Cys	Leu	Glu			
			245					250						255				
Asn	Arg	Gln	Thr	Ala	Ile	Ser	Asp	His	Gln	Arg	Arg	Cys	Phe	Leu	Lys			
			260					265					270					
Ala	Tyr	Val	Asp	Arg	Gln	Glu	Pro	Leu	Ala	Ala	Leu	Leu	Leu	Leu	Val			
	275						280					285						
His	Asp	Ala	Asp	Trp	Val	Leu	His	Glu	Phe	Ser	Asp	Ser	Asp	Leu	Gln			
	290					295					300							
Ser	Phe	Ile	Gln	Leu	Leu	Pro	Arg	Glu	Ala	His	Tyr	Thr	Lys	Lys	Phe			
305				310					315						320			
Leu	Gly	Cys	Val	Ala	Gln	Ser	Cys	Arg	Leu	Gly	Ile	Leu	Leu	Glu	Gly			
			325					330						335				

&lt;210&gt; 573

&lt;211&gt; 426

&lt;212&gt; PRT

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 573

Met	Tyr	Val	Arg	Ser	Ile	Phe	Phe	Ser	Ile	Ile	Ala	Phe	Leu	Thr	Val			
1				5				10					15					
Gly	Cys	Ser	Phe	Ser	Pro	Pro	Glu	Ser	Gly	Leu	Ile	Ile	Ala	Ile	His			
		20					25					30						
Asp	Asp	Pro	Arg	Ser	Leu	Ser	Pro	Glu	Lys	Gly	Glu	Asn	Ala	Phe	His			
		35					40					45						
Phe	Ser	Leu	Ser	Lys	Ala	Leu	Phe	Ala	Thr	Leu	Phe	Arg	Glu	Glu	Leu			
50						55					60							
Ser	Gly	Leu	Thr	Pro	Ala	Leu	Val	Ser	Ser	Tyr	Gln	Val	Ser	Glu	Asp			
65					70				75					80				
Gly	Arg	Phe	Tyr	Arg	Phe	Cys	Ile	Arg	Lys	Asp	Ala	Lys	Trp	Ser	Asp			
			85					90					95					
Gly	Ser	Leu	Leu	Ala	Glu	Asp	Val	Ile	Ala	Ala	Trp	Glu	His	Thr				
		100					105					110						
Lys	Gln	Ala	Gly	Arg	Tyr	Ser	Leu	Leu	Phe	Glu	Lys	Leu	Ser	Phe	Arg			
		115					120					125						
Ala	Ser	Ser	Ser	Ser	Glu	Ile	Leu	Ile	Glu	Leu	Lys	Glu	Pro	Glu	Pro			
	130					135					140							
Gln	Leu	Leu	Ala	Ile	Leu	Ala	Ser	Pro	Phe	Phe	Ala	Val	Tyr	Arg	Pro			
145					150					155					160			
Glu	Asn	Pro	Phe	Leu	Ser	Ser	Gly	Pro	Phe	Met	Pro	Lys	Thr	Tyr	Val			
			165					170						175				
Gln	Gly	Gln	Thr	Leu	Val	Leu	Gln	Lys	Asn	Pro	Tyr	Tyr	Tyr	Asp	His			
			180					185					190					
Ala	His	Val	Glu	Leu	His	Ser	Ile	Asp	Phe	Arg	Ile	Ile	Pro	Asn	Ile			

		195					200					205				
Tyr	Thr	Ala	Leu	His	Leu	Leu	Arg	Arg	Gly	Asp	Val	Asp	Trp	Val	Gly	
	210					215					220					
Gln	Pro	Trp	His	Gln	Gly	Ile	Pro	Phe	Glu	Leu	Arg	Thr	Thr	Ser	Ala	
225				230						235					240	
Leu	Tyr	Thr	His	Tyr	Ser	Val	Asp	Gly	Thr	Phe	Trp	Leu	Ile	Leu	Asn	
				245					250					255		
Pro	Lys	Asp	Pro	Val	Leu	Ser	Ser	Leu	Ser	Asn	Arg	Gln	Arg	Leu	Ile	
			260					265					270			
Ala	Ala	Val	Gln	Lys	Glu	Lys	Leu	Val	Lys	Gln	Ala	Leu	Gly	Thr	Gln	
		275					280					285				
Tyr	Arg	Val	Ala	Glu	Ser	Ser	Pro	Ser	Pro	Glu	Gly	Ile	Ile	Ala	His	
	290					295					300					
Gln	Glu	Ala	Ser	Thr	Pro	Phe	Pro	Gly	Lys	Ile	Thr	Leu	Ile	Tyr	Pro	
305					310					315					320	
Asn	Asn	Ile	Thr	Arg	Cys	Gln	Arg	Leu	Ala	Glu	Val	Leu	Gln	Glu	Gln	
				325					330					335		
Cys	Arg	Asp	Ala	Gly	Ile	Gln	Leu	Thr	Leu	Glu	Gly	Leu	Glu	Tyr	His	
			340					345					350			
Val	Phe	Val	Gln	Lys	Arg	Ala	Thr	Gln	Asp	Phe	Ser	Val	Ser	Thr	Ala	
		355					360					365				
Thr	Ser	Ile	Ala	Phe	His	Pro	Leu	Ala	Lys	Ser	Lys	Phe	Asp	Gln	Thr	
	370					375					380					
Ala	Leu	Asp	Asn	Phe	Thr	Cys	Leu	Pro	Leu	Tyr	His	Ile	Glu	Tyr	Asp	
385					390					395					400	
Tyr	Ile	Leu	Ser	Arg	Pro	Leu	Asp	Gln	Ile	Val	His	Tyr	Pro	Ser	Gly	
				405					410					415		
Ser	Val	Asp	Leu	Thr	Tyr	Ala	His	Phe	His							
			420					425								

<210> 574

<211> 605

&lt;212&gt; PRT

<213> C. Trachomatis D serovar

<400> 574

Met 1	Gln	Asn	Ile	Leu 5	Arg	Thr	Ser	Ser	Cys 10	Arg	Tyr	Met	Phe	Leu 15	
Gly	Ile	Arg	Ser	Val	Trp	Asn	Arg	Val	Ala	Val	Val	Asn	Asn	Phe	Arg
			20					25					30		
Gly	Ser	Ser	Trp	Lys	Ile	Val	Ala	Ile	Pro	Ser	Cys	Ile	Leu	Phe	Thr
		35					40					45			
Leu	Ile	Phe	His	Leu	Pro	Arg	Trp	Leu	Ile	Asp	Phe	Gly	Val	Cys	Thr
	50					55					60				
Asn	Leu	Ala	Cys	Ser	Leu	Ser	Ile	Ile	Phe	Trp	Val	Phe	Ser	Leu	Arg
65					70					75					80
Ser	Ser	Ala	Ser	Ala	Arg	Ile	Phe	Pro	Ser	Leu	Leu	Leu	Tyr	Leu	Cys
				85					90					95	
Leu	Leu	Arg	Leu	Gly	Leu	Asn	Leu	Ala	Ser	Thr	Arg	Trp	Ile	Leu	Ser
			100					105					110		
Ser	Gly	Trp	Ala	Ser	Pro	Leu	Ile	Phe	Ala	Leu	Gly	Asn	Phe	Phe	Ser
		115						120				125			
Leu	Gly	Ser	Ile	Pro	Val	Ala	Leu	Thr	Val	Cys	Leu	Leu	Leu	Phe	Leu
		130				135					140				
Val	Asn	Phe	Leu	Val	Ile	Thr	Lys	Gly	Ala	Glu	Arg	Ile	Ala	Glu	Val
145					150					155					160
Arg	Ala	Arg	Phe	Ser	Leu	Glu	Ala	Leu	Pro	Gly	Lys	Gln	Met	Ser	Leu
				165					170					175	
Asp	Ala	Asp	Ile	Ala	Ala	Gly	Arg	Ile	Gly	Tyr	Ser	Arg	Ala	Ser	Val
			180					185					190		
Lys	Lys	Ser	Ser	Leu	Leu	Glu	Glu	Ser	Asp	Tyr	Phe	Ser	Ala	Met	Glu

		195					200					205						
Gly	Val	Phe	Arg	Phe	Val	Lys	Gly	Asp	Ala	Ile	Met	Ser	Trp	Val	Leu			
	210					215					220							
Leu	Gly	Val	Asn	Ile	Leu	Ala	Ala	Leu	Phe	Leu	Gly	Arg	Ala	Thr	His			
225					230					235					240			
Val	Gly	Asp	Leu	Trp	Leu	Thr	Val	Leu	Gly	Asp	Ala	Leu	Val	Ser	Gln			
				245						250					255			
Ile	Pro	Ala	Leu	Leu	Thr	Ser	Cys	Ala	Ala	Ala	Thr	Leu	Ile	Ala	Lys			
			260					265					270					
Val	Gly	Glu	Lys	Glu	Ser	Leu	Ala	Gln	His	Leu	Leu	Asp	Tyr	Tyr	Glu			
		275					280					285						
Gln	Ser	Arg	Gln	Ser	Phe	Leu	Phe	Ile	Ala	Leu	Ile	Leu	Cys	Gly	Met			
		290				295					300							
Ala	Cys	Ile	Pro	Gly	Ala	Pro	Lys	Ala	Leu	Ile	Leu	Gly	Phe	Ser	Val			
305					310					315					320			
Leu	Leu	Phe	Leu	Gly	Tyr	Lys	Asn	Pro	Ser	Ser	Gly	Glu	Thr	Leu	Leu			
				325					330					335				
Phe	Gln	Lys	Glu	Arg	Val	Glu	Phe	Val	Leu	Pro	Asp	Glu	Gly	Val	Gly			
			340					345					350					
Asn	Pro	Ala	Asn	Leu	Tyr	Lys	Asp	Ala	Arg	Asn	Gln	Ile	Tyr	Gln	Glu			
		355					360					365						
Leu	Gly	Val	Val	Phe	Pro	Glu	Ala	Ile	Val	Val	Arg	His	Val	Thr	Gly			
		370				375					380							
Ser	Ser	Pro	Arg	Leu	Ile	Phe	Ser	Gly	Gln	Glu	Val	Ala	Leu	Arg	Glu			
385					390					395					400			
Leu	Ser	Cys	Pro	Ala	Ile	Leu	Glu	Ser	Ile	Arg	Gln	Leu	Ala	Pro	Glu			
				405					410					415				
Thr	Ile	Ser	Glu	Arg	Phe	Val	Thr	Arg	Leu	Val	Asp	Glu	Phe	Arg	Glu			
			420					425					430					
His	Ala	Phe	Leu	Ser	Ile	Glu	Glu	Ile	Leu	Pro	Leu	Lys	Ile	Ser	Glu			
		435					440					445						
Asn	Ser	Leu	Ile	Phe	Leu	Leu	Arg	Ala	Leu	Val	Arg	Glu	Arg	Val	Ser			
		450				455					460							
Leu	His	Leu	Phe	Pro	Lys	Ile	Leu	Glu	Ala	Ile	Asp	Val	Tyr	Gly	Ser			
465					470					475					480			
Gln	Pro	Lys	Asn	Ser	Gln	Glu	Leu	Val	Glu	Cys	Val	Arg	Lys	Tyr	Leu			
				485					490					495				
Gly	Lys	Gln	Ile	Gly	Leu	Ser	Leu	Trp	Asn	Arg	Gln	Asp	Val	Leu	Glu			
			500					505					510					
Val	Ile	Thr	Ile	Asp	Ser	Leu	Val	Glu	Gln	Phe	Val	Arg	Asp	Ser	Gln			
		515					520					525						
Glu	Lys	Val	Val	Leu	Asp	Leu	Asn	Glu	Lys	Val	Val	Ala	Gln	Val	Lys			
		530				535												

<210> 575

<211> 173

<212> PRT

<213> C. Trachomatis D serovar

<400> 575

Met Lys Lys Phe Leu Leu Leu Ser Leu Met Ser Leu Ser Ser Leu Pro  
1 5 10 15  
Thr Phe Ala Ala Asn Ser Thr Gly Thr Ile Gly Ile Val Asn Leu Arg



Arg	Cys	Leu	Glu	Glu	Ser	Ala	Leu	Gly	Lys	Lys	Glu	Ser	Ala	Glu	Phe
		35					40					45			
Glu	Lys	Met	Lys	Asn	Gln	Phe	Ser	Asn	Ser	Met	Gly	Lys	Met	Glu	Glu
	50					55					60				
Glu	Leu	Ser	Ser	Ile	Tyr	Ser	Lys	Leu	Gln	Asp	Asp	Asp	Tyr	Met	Glu
65					70					75					80
Gly	Leu	Ser	Glu	Thr	Ala	Ala	Ala	Glu	Leu	Arg	Lys	Lys	Phe	Glu	Asp
				85					90						95
Leu	Ser	Ala	Glu	Tyr	Asn	Thr	Ala	Gln	Gly	Gln	Tyr	Tyr	Gln	Ile	Leu
			100					105					110		
Asn	Gln	Ser	Asn	Leu	Lys	Arg	Met	Gln	Lys	Ile	Met	Glu	Glu	Val	Lys
			115				120					125			
Lys	Ala	Ser	Glu	Thr	Val	Arg	Ile	Gln	Glu	Gly	Leu	Ser	Val	Leu	Leu
	130					135					140				
Asn	Glu	Asp	Ile	Val	Leu	Ser	Ile	Asp	Ser	Ser	Ala	Asp	Lys	Thr	Asp
145					150					155					160
Ala	Val	Ile	Lys	Val	Leu	Asp	Asp	Ser	Phe	Gln	Asn	Asn			
				165					170						

<210> 576

<211> 354

&lt;212&gt; PRT

<213> C. Trachomatis D serovar

<400> 576

Met 1	Ser	Gln	Ser	Thr 5	Tyr	Ser	Leu	Glu	Gln 10	Leu	Ala	Asp	Phe	Leu 15	Lys
Val	Glu	Phe	Gln 20	Gly	Asn	Gly	Ala	Thr 25	Leu	Leu	Ser	Gly	Val 30	Glu	Glu
Ile	Glu	Glu 35	Ala	Lys	Thr	Ala	His 40	Ile	Thr	Phe	Leu	Asp 45	Asn	Glu	Lys
Tyr	Ala 50	Lys	His	Leu	Lys	Ser 55	Ser	Glu	Ala	Gly	Ala 60	Ile	Ile	Ile	Ser
Arg 65	Thr	Gln	Phe	Gln	Lys 70	Tyr	Arg	Asp	Leu	Asn 75	Lys	Asn	Phe	Leu 80	Ile
Thr	Ser	Glu	Ser	Pro 85	Ser	Leu	Val	Phe	Gln 90	Lys	Cys	Leu	Glu	Leu 95	Phe
Ile	Thr	Pro	Val 100	Asp	Ser	Gly	Phe	Pro 105	Gly	Ile	His	Pro	Thr 110	Ala	Val
Ile	His	Pro 115	Thr	Ala	Ile	Ile	Glu 120	Asp	His	Val	Cys	Ile 125	Glu	Pro	Tyr
Ala	Val 130	Val	Cys	Gln	His	Ala 135	His	Val	Gly	Ser	Ala 140	Cys	His	Ile	Gly
Ser 145	Gly	Ser	Val	Ile	Gly 150	Ala	Tyr	Ser	Thr	Val 155	Gly	Glu	His	Ser	Tyr 160
Ile	His	Pro	Arg	Val 165	Val	Ile	Arg	Glu	Arg 170	Val	Ser	Ile	Gly	Lys 175	Arg
Val	Ile	Ile	Gln 180	Pro	Gly	Ala	Val	Ile 185	Gly	Ser	Cys	Gly	Phe 190	Gly	Tyr
Val	Thr	Ser 195	Ala	Phe	Gly	Gln	His 200	Lys	His	Leu	Lys	His 205	Leu	Gly	Lys
Val 210	Ile	Ile	Glu	Asp	Asp	Val 215	Glu	Ile	Gly	Ala	Asn 220	Thr	Thr	Ile	Asp
Arg 225	Gly	Arg	Phe	Lys	His	Ser 230	Val	Val	Arg	Glu 235	Gly	Ser	Lys	Ile	Asp 240
Asn	Leu	Val	Gln	Ile 245	Ala	His	Gln	Val	Glu 250	Val	Gly	Gln	His	Ser 255	Met
Ile	Val	Ala	Gln 260	Ala	Gly	Ile	Ala	Gly 265	Ser	Thr	Lys	Ile	Gly	Asn	His
Val	Ile	Ile	Gly	Gly	Gln	Ala	Gly	Ile	Thr	Gly	His	Ile	Cys	Ile	Ala

353

Asp	His	275	Val	Ile	Met	Met	Ala	280	Gln	Thr	Gly	Val	Thr	285	Lys	Ser	Ile	Thr
	290						295						300					
Ser	Pro	Gly	Ile	Tyr	Gly	Gly	Ala	Pro	Ala	Arg	Pro	Tyr	Gln	Glu	Ile			
305					310					315					320			
His	Arg	Gln	Val	Ala	Lys	Val	Arg	Asn	Leu	Pro	Arg	Leu	Glu	Glu	Arg			
				325					330						335			
Ile	Ala	Ala	Leu	Glu	Lys	Leu	Val	Gln	Lys	Leu	Glu	Ala	Leu	Ser	Glu			
			340					345						350				
Gln	His																	

&lt;210&gt; 577

&lt;211&gt; 421

&lt;212&gt; PRT

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 577

Met	Thr	Ala	Ser	Gly	Gly	Ala	Gly	Gly	Leu	Gly	Ser	Thr	Gln	Thr	Val			
1				5					10					15				
Asp	Val	Ala	Arg	Ala	Gln	Ala	Ala	Ala	Ala	Thr	Gln	Asp	Ala	Gln	Glu			
			20					25					30					
Val	Ile	Gly	Ser	Gln	Glu	Ala	Ser	Glu	Ala	Ser	Met	Leu	Lys	Gly	Cys			
		35					40					45						
Glu	Asp	Leu	Ile	Asn	Pro	Ala	Ala	Ala	Thr	Arg	Ile	Lys	Lys	Lys	Gly			
	50					55					60							
Glu	Lys	Phe	Glu	Ser	Leu	Glu	Ala	Arg	Arg	Lys	Pro	Thr	Ala	Asp	Lys			
65					70				75						80			
Ala	Glu	Lys	Lys	Ser	Glu	Ser	Thr	Glu	Glu	Lys	Gly	Asp	Thr	Pro	Leu			
				85				90						95				
Glu	Asp	Arg	Phe	Thr	Glu	Asp	Leu	Ser	Glu	Val	Ser	Gly	Glu	Asp	Phe			
			100					105					110					
Arg	Gly	Leu	Lys	Asn	Ser	Phe	Asp	Asp	Asp	Ser	Ser	Pro	Asp	Glu	Ile			
		115					120						125					
Leu	Asp	Ala	Leu	Thr	Ser	Lys	Phe	Ser	Asp	Pro	Thr	Ile	Lys	Asp	Leu			
	130					135					140							
Ala	Leu	Asp	Tyr	Leu	Ile	Gln	Thr	Ala	Pro	Ser	Asp	Gly	Lys	Leu	Lys			
145					150				155						160			
Ser	Thr	Leu	Ile	Gln	Ala	Lys	His	Gln	Leu	Met	Ser	Gln	Asn	Pro	Gln			
				165				170						175				
Ala	Ile	Val	Gly	Arg	Asn	Val	Leu	Leu	Ala	Ser	Glu	Thr	Phe	Ala				
			180				185						190					
Ser	Arg	Ala	Asn	Thr	Ser	Pro	Ser	Ser	Leu	Arg	Ser	Leu	Tyr	Phe	Gln			
		195				200						205						
Val	Thr	Ser	Ser	Pro	Ser	Asn	Cys	Ala	Asn	Leu	His	Gln	Met	Leu	Ala			
	210					215					220							
Ser	Tyr	Leu	Pro	Ser	Glu	Lys	Thr	Ala	Val	Met	Glu	Phe	Leu	Val	Asn			
225					230					235					240			
Gly	Met	Val	Ala	Asp	Leu	Lys	Ser	Glu	Gly	Pro	Ser	Ile	Pro	Pro	Ala			
				245					250						255			
Lys	Leu	Gln	Val	Tyr	Met	Thr	Glu	Leu	Ser	Asn	Leu	Gln	Ala	Leu	His			
			260					265						270				
Ser	Val	Asn	Ser	Phe	Phe	Asp	Arg	Asn	Ile	Gly	Asn	Leu	Glu	Asn	Ser			
		275				280						285						
Leu	Lys	His	Glu	Gly	His	Ala	Pro	Ile	Pro	Ser	Leu	Thr	Thr	Gly	Asn			
	290					295					300							
Leu	Thr	Lys	Thr	Phe	Leu	Gln	Leu	Val	Glu	Asp	Lys	Phe	Pro	Ser	Ser			
305					310					315					320			
Ser	Lys	Ala	Gln	Lys	Ala	Leu	Asn	Glu	Leu	Val	Gly	Pro	Asp	Thr	Gly			
				325					330					335				
Pro	Gln	Thr	Glu	Val	Leu	Asn	Leu	Phe	Phe	Arg	Ala	Leu	Asn	Gly	Cys			

[illegible]

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<210> 578
<211> 231
<212> PRT
<213> C. Trachomatis D serovar
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[illegible]

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<210> 579
<211> 243
<212> PRT
<213> C. Trachomatis D serovar
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<400> 579															
Met	Lys	Ile	Thr	Pro	Ile	Lys	Thr	Arg	Lys	Val	Phe	Ala	His	Asp	Ser
1				5					10					15	
Leu	Gln	Glu	Ile	Leu	Gln	Glu	Ala	Leu	Pro	Pro	Leu	Gln	Glu	Arg	Ser
			20					25					30		
Val	Val	Val	Val	Ser	Ser	Lys	Ile	Val	Ser	Leu	Cys	Glu	Gly	Ala	Val
		35					40					45			

Ala Asp Ala Arg Met Cys Lys Ala Glu Leu Ile Lys Lys Glu Ala Asp  
     50                    55                    60  
 Ala Tyr Leu Phe Cys Glu Lys Ser Gly Ile Tyr Leu Thr Lys Lys Glu  
 65                    70                    75                    80  
 Gly Ile Leu Ile Pro Ser Ala Gly Ile Asp Glu Ser Asn Thr Asp Gln  
                     85                    90                    95  
 Pro Phe Val Leu Tyr Pro Lys Asp Ile Leu Gly Ser Cys Asn Arg Ile  
                     100                    105                    110  
 Gly Glu Trp Leu Arg Asn Tyr Phe Arg Val Lys Glu Leu Gly Val Ile  
                     115                    120                    125  
 Ile Thr Asp Ser His Thr Thr Pro Met Arg Arg Gly Val Leu Gly Ile  
                     130                    135                    140  
 Gly Leu Cys Trp Tyr Gly Phe Ser Pro Leu His Asn Tyr Ile Gly Ser  
 145                    150                    155                    160  
 Leu Asp Cys Phe Gly Arg Pro Leu Gln Met Thr Gln Ser Asn Leu Val  
                     165                    170                    175  
 Asp Ala Leu Ala Val Ala Ala Val Val Cys Met Gly Glu Gly Asn Glu  
                     180                    185                    190  
 Gln Thr Pro Leu Ala Val Ile Glu Gln Ala Pro Asn Met Val Tyr His  
                     195                    200                    205  
 Ser His Pro Thr Ser Arg Glu Glu Tyr Cys Ser Leu Arg Ile Asp Glu  
                     210                    215                    220  
 Thr Glu Asp Leu Tyr Gly Pro Phe Leu Gln Ala Val Thr Trp Ser Gln  
 225                    230                    235                    240  
 Glu Lys Lys

&lt;210&gt; 580

&lt;211&gt; 383

&lt;212&gt; PRT

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 580

Met Leu Pro His Gln Gln Asn Ser Ser Ser Glu Arg Ala Arg His His  
     1                    5                    10                    15  
 Glu Ser Arg Ser His Arg His Ser Ser Ser Ser Arg His His Val Thr  
                     20                    25                    30  
 Arg Ser Gln Ser Ser Ala Leu Pro Gln Leu Gln Glu Arg Pro Val Pro  
                     35                    40                    45  
 His Pro Leu Ala Glu Arg Glu Leu Ile Ile Phe His Ser Val His Gln  
                     50                    55                    60  
 Gln Gln Asn Asn Asn Pro Leu Arg Met Ile Cys Asp Thr Ile Arg Gln  
 65                    70                    75                    80  
 Ala Gln Arg Gly Ile Phe Met Arg Ile Tyr Thr Ile Ser Ser Asp Asp  
                     85                    90                    95  
 Ile Ile Gln Ser Leu Ile Gln Thr Ser His His Val Pro Val Glu Val  
                     100                    105                    110  
 Lys Tyr His Cys Gly Glu Ser Leu Pro Val Ala Cys Gln Asn Ser Arg  
                     115                    120                    125  
 Val Val Leu Arg Leu Thr Asn Gly Arg Thr Leu Gln His Lys Lys Thr  
                     130                    135                    140  
 Met Leu Ala Asp Phe Gln Thr Val Val Thr Gly Ser Ala Asn Tyr Thr  
 145                    150                    155                    160  
 Asp Leu Ser Leu Asn His Asp Ala Asn Val Thr Ala Cys Ile Glu Ser  
                     165                    170                    175  
 Ser Glu Leu His Asp Ala Val Phe Ser Glu Arg Pro Gln Leu Val His  
                     180                    185                    190  
 Val Gly Pro Gln Leu Leu Asn Tyr Ile Pro Ile Gln Arg Leu Ile Pro  
                     195                    200                    205  
 Asn Ala Ala Ser Lys Met Ile Leu Asn Ala Ile Asn Gln Ala Thr Asp  
                     210                    215                    220

Ser Ile Phe Val Leu Met Tyr Ile Phe Leu Ser Pro Glu Phe Phe Leu  
 225 230 235 240  
 Ala Leu Ala Gln Ala Met Arg Arg Gly Val Arg Val Lys Val Ile Ile  
 245 250 255  
 Asp Asn His Ser Lys Gln Asp Thr Cys Lys Leu Leu Ser Lys Leu Gly  
 260 265 270  
 Ile Gln Leu Pro Ile Tyr Glu Arg Lys Thr Glu Gly Val Leu His Thr  
 275 280 285  
 Lys Ile Cys Cys Ile Asp Asn Lys Thr Leu Ile Phe Gly Ser Ala Asn  
 290 295 300  
 Trp Ser Gly Ala Gly Met Ile Lys Asn Phe Glu Asp Leu Phe Ile Leu  
 305 310 315 320  
 Arg Pro Ile Thr Glu Thr Gln Leu Gln Ala Phe Met Asp Val Trp Ser  
 325 330 335  
 Leu Leu Glu Thr Asn Ser Ser Tyr Leu Ser Pro Glu Ser Val Leu Thr  
 340 345 350  
 Ala Pro Thr Pro Ser Ser Arg Pro Thr Gln Gln Asp Thr Asp Ser Asp  
 355 360 365  
 Asp Glu Gln Pro Ser Thr Ser Gln Gln Asp Ile Arg Met Arg Lys  
 370 375 380

<210> 581  
 <211> 193  
 <212> PRT  
 <213> C. Trachomatis D serovar

<400> 581  
 Met Trp Phe Phe Leu Gly Ser Pro Ser Ala Ile Thr Asn Phe Ser Arg  
 1 5 10 15  
 Val Asp Val Ala Leu Asn Leu Arg Ile Asn Arg Gln Ile Arg Ala Pro  
 20 25 30  
 Arg Val Arg Val Ile Gly Ser Ala Gly Glu Gln Leu Gly Ile Leu Ser  
 35 40 45  
 Ile Lys Glu Ala Leu Asp Leu Ala Lys Glu Ala Asn Leu Asp Leu Val  
 50 55 60  
 Glu Val Ala Ser Asn Ser Glu Pro Pro Val Cys Lys Ile Met Asp Tyr  
 65 70 75 80  
 Gly Lys Tyr Arg Tyr Asp Val Thr Lys Lys Glu Lys Asp Ser Lys Lys  
 85 90 95  
 Ala Gln His Gln Val Arg Ile Lys Glu Val Lys Leu Lys Pro Asn Ile  
 100 105 110  
 Asp Asp Asn Asp Phe Leu Thr Lys Ala Lys Gln Ala Arg Ala Phe Ile  
 115 120 125  
 Glu Lys Gly Asn Lys Val Lys Val Ser Cys Met Phe Arg Gly Arg Glu  
 130 135 140  
 Leu Ala Tyr Pro Glu His Gly Tyr Lys Val Ile Gln Arg Met Cys Gln  
 145 150 155 160  
 Gly Leu Glu Asp Ile Gly Phe Val Glu Ser Glu Pro Lys Leu Asn Gly  
 165 170 175  
 Arg Ser Leu Ile Cys Val Ile Ala Pro Gly Thr Leu Lys Thr Lys Lys  
 180 185 190  
 Lys

<210> 582  
 <211> 264  
 <212> PRT  
 <213> C. Trachomatis D serovar

<400> 582  
 Met Gly Asn Ser Gly Phe Tyr Leu Tyr Asn Thr Glu Asn Cys Val Phe

357

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1           5           10           15
Ala Asp Asn Ile Lys Val Gly Gln Met Thr Glu Pro Leu Lys Asp Gln
20           25           30
Gln Ile Ile Leu Gly Thr Lys Ser Thr Pro Val Ala Ala Lys Met Thr
35           40           45
Ala Ser Asp Gly Ile Ser Leu Thr Val Ser Asn Asn Ser Ser Thr Asn
50           55           60
Ala Ser Ile Thr Ile Gly Leu Asp Ala Glu Lys Ala Tyr Gln Leu Ile
65           70           75
Leu Glu Lys Leu Gly Asn Gln Ile Leu Asp Gly Ile Ala Asp Thr Ile
85           90           95
Val Asp Ser Thr Val Gln Asp Ile Leu Asp Lys Ile Thr Thr Asp Pro
100          105          110
Ser Leu Gly Leu Leu Lys Ala Phe Asn Asn Phe Pro Ile Thr Asn Lys
115          120          125
Ile Gln Cys Asn Gly Leu Phe Thr Pro Ser Asn Ile Glu Thr Leu Leu
130          135          140
Gly Gly Thr Glu Ile Gly Lys Phe Thr Val Thr Pro Lys Ser Ser Gly
145          150          155
Ser Met Phe Leu Val Ser Ala Asp Ile Ile Ala Ser Arg Met Glu Gly
165          170          175
Gly Val Val Leu Ala Leu Val Arg Glu Gly Asp Ser Lys Pro Cys Ala
180          185          190
Ile Ser Tyr Gly Tyr Ser Ser Gly Val Pro Asn Leu Cys Ser Leu Arg
195          200          205
Thr Ser Ile Thr Asn Thr Gly Leu Thr Pro Thr Thr Tyr Ser Leu Arg
210          215          220
Val Gly Gly Leu Glu Ser Gly Val Val Trp Val Asn Ala Leu Ser Asn
225          230          235
Gly Asn Asp Ile Leu Gly Ile Thr Asn Thr Ser Asn Val Ser Phe Leu
245          250          255
Glu Val Ile Pro Gln Thr Asn Ala
260

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&lt;210&gt; 583

&lt;211&gt; 1053

&lt;212&gt; PRT

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 583

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Met Phe Thr Arg Ile Val Met Val Asp Leu Gln Glu Lys Gln Cys Thr
1           5           10           15
Ile Val Lys Arg Asn Gly Met Phe Val Pro Phe Asp Arg Asn Arg Ile
20           25           30
Phe Gln Ala Leu Glu Ala Ala Phe Arg Asp Thr Arg Arg Ile Asp Asp
35           40           45
His Met Pro Leu Pro Glu Asp Leu Glu Ser Ser Ile Arg Ser Ile Thr
50           55           60
His Gln Val Val Lys Glu Val Val Gln Lys Ile Thr Asp Gly Gln Val
65           70           75
Val Thr Val Glu Arg Ile Gln Asp Met Val Glu Ser Gln Leu Tyr Val
85           90           95
Asn Gly Leu Gln Asp Val Ala Arg Asp Tyr Ile Val Tyr Arg Asp Asp
100          105          110
Arg Lys Ala His Arg Lys Lys Ser Trp Gln Ser Leu Ser Val Val Arg
115          120          125
Arg Cys Gly Thr Val Val His Phe Asn Pro Met Lys Ile Ser Ala Ala
130          135          140
Leu Glu Lys Ala Phe Arg Ala Thr Asp Lys Thr Glu Gly Met Thr Pro
145          150          155
Ser Ser Val Arg Glu Glu Ile Asn Ala Leu Thr Gln Asn Ile Val Ala

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				165				170				175			
Glu	Ile	Glu	Glu	Cys	Cys	Pro	Gln	Gln	Asp	Arg	Arg	Ile	Asp	Ile	Glu
			180					185					190		
Lys	Ile	Gln	Asp	Ile	Val	Glu	Gln	Leu	Met	Val	Val	Gly	His	Tyr	
		195					200					205			
Ala	Val	Ala	Lys	Asn	Tyr	Ile	Leu	Tyr	Arg	Glu	Ala	Arg	Ala	Arg	Val
	210					215				220					
Arg	Asp	Asn	Arg	Glu	Glu	Asp	Gly	Ser	Thr	Glu	Lys	Thr	Ile	Ala	Glu
225					230					235					240
Glu	Ala	Val	Glu	Val	Leu	Ser	Lys	Asp	Gly	Ser	Thr	Tyr	Thr	Met	Thr
				245					250					255	
His	Ser	Gln	Leu	Leu	Ala	His	Leu	Ala	Arg	Ala	Cys	Ser	Arg	Phe	Pro
			260					265					270		
Glu	Thr	Thr	Asp	Ala	Ala	Leu	Leu	Thr	Asp	Met	Ala	Phe	Ala	Asn	Phe
		275					280					285			
Tyr	Ser	Gly	Ile	Lys	Glu	Ser	Glu	Val	Val	Leu	Ala	Cys	Ile	Met	Ala
	290					295					300				
Ala	Arg	Ala	Asn	Ile	Glu	Lys	Glu	Pro	Asp	Tyr	Ala	Phe	Val	Ala	Ala
305					310					315					320
Glu	Leu	Leu	Leu	Asp	Val	Val	Tyr	Lys	Glu	Ala	Leu	Gly	Lys	Ser	Lys
				325					330					335	
Tyr	Ala	Glu	Asp	Leu	Glu	Gln	Ala	His	Arg	Asp	His	Phe	Lys	Arg	Tyr
			340					345					350		
Ile	Ala	Glu	Gly	Asp	Thr	Tyr	Arg	Leu	Asn	Ala	Glu	Leu	Lys	His	Leu
		355					360					365			
Phe	Asp	Leu	Asp	Ala	Leu	Ala	Asp	Ala	Met	Asp	Leu	Ser	Arg	Asp	Leu
	370					375					380				
Gln	Phe	Ser	Tyr	Met	Gly	Ile	Gln	Asn	Leu	Tyr	Asp	Arg	Tyr	Phe	Asn
385					390					395					400
His	His	Glu	Gly	Cys	Arg	Leu	Glu	Thr	Pro	Gln	Ile	Phe	Trp	Met	Arg
				405					410					415	
Val	Ala	Met	Gly	Leu	Ala	Leu	Asn	Glu	Gln	Asp	Lys	Thr	Ser	Trp	Ala
			420					425					430		
Ile	Thr	Phe	Tyr	Asn	Leu	Leu	Ser	Thr	Phe	Arg	Tyr	Thr	Pro	Ala	Thr
		435					440					445			
Pro	Thr	Leu	Phe	Asn	Ser	Gly	Met	Arg	His	Ser	Gln	Leu	Ser	Ser	Cys
	450					455					460				
Tyr	Leu	Ser	Thr	Val	Gln	Asp	Asn	Leu	Val	Asn	Ile	Tyr	Lys	Val	Ile
465					470					475					480
Ala	Asp	Asn	Ala	Met	Leu	Ser	Lys	Trp	Ala	Gly	Gly	Ile	Gly	Asn	Asp
				485					490					495	
Trp	Thr	Ala	Ile	Arg	Ala	Thr	Gly	Ala	Leu	Ile	Lys	Gly	Thr	Asn	Gly
			500					505					510		
Arg	Ser	Gln	Gly	Val	Ile	Pro	Phe	Ile	Lys	Val	Thr	Asn	Asp	Thr	Ala
		515					520					525			
Val	Ala	Val	Asn	Gln	Gly	Gly	Lys	Arg	Lys	Gly	Ala	Val	Cys	Val	Tyr
	530					535					540				
Leu	Glu	Val	Trp	His	Leu	Asp	Tyr	Glu	Asp	Phe	Leu	Glu	Leu	Arg	Lys
545					550					555					560
Asn	Thr	Gly	Asp	Glu	Arg	Arg	Arg	Ala	His	Asp	Val	Asn	Ile	Ala	Ser
				565					570					575	
Trp	Ile	Pro	Asp	Leu	Phe	Phe	Lys	Arg	Leu	Gln	Gln	Lys	Gly	Thr	Trp
			580					585					590		
Thr	Leu	Phe	Ser	Pro	Asp	Asp	Val	Pro	Gly	Leu	His	Asp	Ala	Tyr	Gly
		595					600					605			
Glu	Glu	Phe	Glu	Arg	Leu	Tyr	Glu	Glu	Tyr	Glu	Arg	Lys	Val	Asp	Thr
	610					615					620				
Gly	Glu	Ile	Arg	Leu	Phe	Lys	Lys	Val	Glu	Ala	Glu	Asp	Leu	Trp	Arg
625					630					635					640
Lys	Met	Leu	Ser	Met	Leu	Phe	Glu	Thr	Gly	His	Pro	Trp	Met	Thr	Phe
				645					650					655	

Lys Asp Pro Ser Asn Ile Arg Ser Ala Gln Asp His Lys Gly Val Val  
 660 665 670  
 Arg Cys Ser Asn Leu Cys Thr Glu Ile Leu Leu Asn Cys Ser Glu Thr  
 675 680 685  
 Glu Thr Ala Val Cys Asn Leu Gly Ser Ile Asn Leu Val Gln His Ile  
 690 695 700  
 Val Gly Asp Gly Leu Asp Glu Glu Lys Leu Ser Glu Thr Ile Ser Ile  
 705 710 715 720  
 Ala Val Arg Met Leu Asp Asn Val Ile Asp Ile Asn Phe Tyr Pro Thr  
 725 730 735  
 Lys Glu Ala Lys Glu Ala Asn Phe Ala His Arg Ala Ile Gly Leu Gly  
 740 745 750  
 Val Met Gly Phe Gln Asp Ala Leu Tyr Lys Leu Asp Ile Ser Tyr Ala  
 755 760 765  
 Ser Gln Glu Ala Val Glu Phe Ala Asp Tyr Ser Ser Glu Leu Ile Ser  
 770 775 780  
 Tyr Tyr Ala Ile Gln Ala Ser Cys Leu Leu Ala Lys Glu Arg Gly Thr  
 785 790 795 800  
 Tyr Ser Ser Tyr Lys Gly Ser Lys Trp Asp Arg Gly Leu Leu Pro Ile  
 805 810 815  
 Asp Thr Ile Gln Leu Leu Ala Asn Tyr Arg Gly Glu Ala Asn Leu Gln  
 820 825 830  
 Met Asp Thr Ser Ser Arg Lys Asp Trp Glu Pro Ile Arg Ser Leu Val  
 835 840 845  
 Lys Glu His Gly Met Arg His Cys Gln Leu Met Ala Ile Ala Pro Thr  
 850 855 860  
 Ala Thr Ile Ser Asn Ile Ile Gly Val Thr Gln Ser Ile Glu Pro Thr  
 865 870 875 880  
 Tyr Lys His Leu Phe Val Lys Ser Asn Leu Ser Gly Glu Phe Thr Ile  
 885 890 895  
 Pro Asn Val Tyr Leu Ile Glu Lys Leu Lys Lys Leu Gly Ile Trp Asp  
 900 905 910  
 Ala Asp Met Leu Asp Asp Leu Lys Tyr Phe Asp Gly Ser Leu Leu Glu  
 915 920 925  
 Ile Glu Arg Ile Pro Asp His Leu Lys His Ile Phe Leu Thr Ala Phe  
 930 935 940  
 Glu Ile Glu Pro Glu Trp Ile Ile Glu Cys Ala Ser Arg Arg Gln Lys  
 945 950 955 960  
 Trp Ile Asp Met Gly Gln Ser Leu Asn Leu Tyr Leu Ala Gln Pro Asp  
 965 970 975  
 Gly Lys Lys Leu Ser Asn Met Tyr Leu Thr Ala Trp Lys Lys Gly Leu  
 980 985 990  
 Lys Thr Thr Tyr Tyr Leu Arg Ser Ser Ala Thr Thr Val Glu Lys  
 995 1000 1005  
 Ser Phe Val Asp Ile Asn Lys Arg Gly Ile Gln Pro Arg Trp Met Lys  
 1010 1015 1020  
 Asn Lys Ser Ala Ser Ala Gly Ile Ile Val Glu Arg Ala Lys Lys Ala  
 1025 1030 1035 1040  
 Pro Val Cys Ser Leu Glu Glu Gly Cys Glu Ala Cys Gln  
 1045 1050

&lt;210&gt; 584

&lt;211&gt; 346

&lt;212&gt; PRT

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 584

Met Gln Ala Asp Ile Leu Asp Gly Lys Gln Lys Arg Val Asn Leu Asn  
 1 5 10 15  
 Ser Lys Arg Leu Val Asn Cys Asn Gln Val Asp Val Asn Gln Leu Val  
 20 25 30



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Pro Ile Lys Tyr Lys Trp Ala Trp Glu His Tyr Leu Asn Gly Cys Ala
   35         40
Asn Asn Trp Leu Pro Thr Glu Ile Pro Met Gly Lys Asp Ile Glu Leu
   50         55
Trp Lys Ser Asp Arg Leu Ser Glu Asp Glu Arg Arg Val Ile Leu Leu
   65         70         75         80
Asn Leu Gly Phe Phe Ser Thr Ala Glu Ser Leu Val Gly Asn Asn Ile
           85         90         95
Val Leu Ala Ile Phe Lys His Val Thr Asn Pro Glu Ala Arg Gln Tyr
           100        105        110
Leu Leu Arg Gln Ala Phe Glu Glu Ala Val His Thr His Thr Phe Leu
           115        120        125
Tyr Ile Cys Glu Ser Leu Gly Leu Asp Glu Lys Glu Ile Phe Asn Ala
           130        135        140
Tyr Asn Glu Arg Ala Ala Ile Lys Ala Lys Asp Asp Phe Gln Met Glu
           145        150        155        160
Ile Thr Gly Lys Val Leu Asp Pro Asn Phe Arg Thr Asp Ser Val Glu
           165        170        175
Gly Leu Gln Glu Phe Val Lys Asn Leu Val Gly Tyr Tyr Ile Ile Met
           180        185        190
Glu Gly Ile Phe Phe Tyr Ser Gly Phe Val Met Ile Leu Ser Phe His
           195        200        205
Arg Gln Asn Lys Met Ile Gly Ile Gly Glu Gln Tyr Gln Tyr Ile Leu
           210        215        220
Arg Asp Glu Thr Ile His Leu Asn Phe Gly Ile Asp Leu Ile Asn Gly
           225        230        235        240
Ile Lys Glu Glu Asn Pro Glu Ile Trp Thr Pro Glu Leu Gln Gln Glu
           245        250        255
Ile Val Glu Leu Ile Lys Arg Ala Val Asp Leu Glu Ile Glu Tyr Ala
           260        265        270
Gln Asp Cys Leu Pro Arg Gly Ile Leu Gly Leu Arg Ala Ser Met Phe
           275        280        285
Ile Asp Tyr Val Gln His Ile Ala Asp Arg Arg Leu Glu Arg Ile Gly
           290        295        300
Leu Lys Pro Ile Tyr His Thr Lys Asn Pro Phe Pro Trp Met Ser Glu
           305        310        315        320
Thr Ile Asp Leu Asn Lys Glu Lys Asn Phe Phe Glu Thr Arg Val Ile
           325        330        335
Glu Tyr Gln His Ala Ala Ser Leu Thr Trp
           340        345

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&lt;210&gt; 585

&lt;211&gt; 326

&lt;212&gt; PRT

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 585

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Met Ser Phe Phe His Thr Arg Lys Tyr Lys Leu Ile Leu Arg Gly Leu
   1         5         10
Leu Cys Leu Ala Gly Cys Phe Leu Met Asn Ser Cys Ser Ser Ser Arg
           20        25        30
Gly Asn Gln Pro Ala Asp Glu Ser Ile Tyr Val Leu Ser Met Asn Arg
           35        40        45
Met Ile Cys Asp Cys Val Ser Arg Ile Thr Gly Asp Arg Val Lys Asn
           50        55        60
Ile Val Leu Ile Asp Gly Ala Ile Asp Pro His Ser Tyr Glu Met Val
           65        70        75        80
Lys Gly Asp Glu Asp Arg Met Ala Met Ser Gln Leu Ile Phe Cys Asn
           85        90        95
Gly Leu Gly Leu Glu His Ser Ala Ser Leu Arg Lys His Leu Glu Gly
           100       105       110

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Asn Pro Lys Val Val Asp Leu Gly Gln Arg Leu Leu Asn Lys Asn Cys  
           115                  120          125  
 Phe Asp Leu Leu Ser Glu Glu Gly Phe Pro Asp Pro His Ile Trp Thr  
       130                  135          140  
 Asp Met Arg Val Trp Gly Ala Ala Val Lys Glu Met Ala Ala Ala Leu  
 145                  150          155          160  
 Ile Gln Gln Phe Pro Gln Tyr Glu Glu Asp Phe Gln Lys Asn Ala Asp  
                   165          170          175  
 Gln Ile Leu Ser Glu Met Glu Glu Leu Asp Arg Trp Ala Ala Arg Ser  
                   180          185          190  
 Leu Ser Thr Ile Pro Glu Lys Asn Arg Tyr Leu Val Thr Gly His Asn  
       195                  200          205  
 Ala Phe Ser Tyr Phe Thr Arg Arg Tyr Leu Ser Ser Asp Ala Glu Arg  
       210                  215          220  
 Val Ser Gly Glu Trp Arg Ser Arg Cys Ile Ser Pro Glu Gly Leu Ser  
 225                  230          235          240  
 Pro Glu Ala Gln Ile Ser Ile Arg Asp Ile Met Arg Val Val Glu Tyr  
                   245          250          255  
 Ile Ser Ala Asn Asp Val Glu Val Val Phe Leu Glu Asp Thr Leu Asn  
                   260          265          270  
 Gln Asp Ala Leu Arg Lys Ile Val Ser Cys Ser Lys Ser Gly Gln Lys  
       275                  280          285  
 Ile Arg Leu Ala Lys Ser Pro Leu Tyr Ser Asp Asn Val Cys Asp Asn  
       290                  295          300  
 Tyr Phe Ser Thr Phe Gln His Asn Val Arg Thr Ile Thr Glu Glu Leu  
 305                  310          315          320  
 Gly Gly Thr Val Leu Glu  
                   325

&lt;210&gt; 586

&lt;211&gt; 102

&lt;212&gt; PRT

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 586

Met Gln Asn Lys Arg Lys Val Arg Asp Asp Phe Ile Lys Ile Val Lys  
   1                  5          10          15  
 Asp Val Lys Lys Asp Phe Pro Glu Leu Asp Leu Lys Ile Arg Val Asn  
       20                  25          30  
 Lys Glu Lys Val Thr Phe Leu Asn Ser Pro Leu Glu Leu Tyr His Lys  
       35                  40          45  
 Ser Val Ser Leu Ile Leu Gly Leu Leu Gln Gln Ile Glu Asn Ser Leu  
       50                  55          60  
 Gly Leu Phe Pro Asp Ser Pro Val Leu Glu Lys Leu Glu Asp Asn Ser  
 65                  70          75          80  
 Leu Lys Leu Lys Lys Ala Leu Ile Met Leu Ile Leu Ser Arg Lys Asp  
                   85          90          95  
 Met Phe Ser Lys Ala Glu  
                   100

&lt;210&gt; 587

&lt;211&gt; 243

&lt;212&gt; PRT

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 587

Val Gly Cys Asn Leu Ala Gln Phe Leu Gly Lys Lys Val Leu Leu Ala  
   1                  5          10          15  
 Asp Leu Asp Pro Gln Ser Asn Leu Ser Ser Gly Leu Gly Ala Ser Val  
       20                  25          30  
 Arg Asn Asn Gln Lys Gly Leu His Asp Ile Val Tyr Lys Ser Asn Asp

Leu	Lys	35	Ser	Ile	Ile	Cys	Glu	40	Thr	Lys	Lys	Asp	Ser	45	Val	Asp	Leu	Ile
50							55						60					
Pro	Ala	Ser	Phe	Leu	Ser	Glu	Gln	Phe	Arg	Glu	Leu	Asp	Ile	His	Arg			
65					70					75				80				
Gly	Pro	Ser	Asn	Asn	Leu	Lys	Leu	Phe	Leu	Asn	Glu	Tyr	Cys	Ala	Pro			
			85						90					95				
Phe	Tyr	Asp	Ile	Cys	Ile	Ile	Asp	Thr	Pro	Pro	Ser	Leu	Gly	Gly	Leu			
		100					105						110					
Thr	Lys	Glu	Ala	Phe	Val	Ala	Gly	Asp	Lys	Leu	Ile	Ala	Cys	Leu	Thr			
	115						120					125						
Pro	Glu	Pro	Phe	Ser	Ile	Leu	Gly	Leu	Gln	Lys	Ile	Arg	Glu	Phe	Leu			
130						135					140							
Ser	Ser	Val	Gly	Lys	Pro	Glu	Glu	Glu	His	Ile	Leu	Gly	Ile	Ala	Leu			
145					150					155					160			
Ser	Phe	Trp	Asp	Asp	Arg	Asn	Ser	Thr	Asn	Gln	Met	Tyr	Ile	Asp	Ile			
			165						170					175				
Ile	Glu	Ser	Ile	Tyr	Lys	Asn	Lys	Leu	Phe	Ser	Thr	Lys	Ile	Arg	Arg			
		180						185					190					
Asp	Ile	Ser	Leu	Ser	Arg	Ser	Leu	Leu	Lys	Glu	Asp	Ser	Val	Ala	Asn			
	195						200					205						
Val	Tyr	Pro	Asn	Ser	Arg	Ala	Ala	Glu	Asp	Ile	Leu	Lys	Leu	Thr	His			
	210					215					220							
Glu	Ile	Ala	Asn	Ile	Leu	His	Ile	Glu	Tyr	Glu	Arg	Asp	Tyr	Ser	Gln			
225					230					235					240			
Arg	Thr	Thr																

&lt;210&gt; 588

&lt;211&gt; 527

&lt;212&gt; PRT

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 588

Met	Pro	Ser	Leu	Ser	Gln	Ser	Arg	Arg	Ile	Ile	Gln	Gln	Ser	Ser	Ile			
1				5					10					15				
Arg	Lys	Ile	Trp	Asn	Gln	Ile	Asp	Thr	Ser	Pro	Lys	His	Gly	Val	Cys			
		20						25					30					
Val	Pro	Leu	Phe	Ser	Leu	Tyr	Thr	Gln	Glu	Ser	Cys	Gly	Ile	Gly	Glu			
	35						40					45						
Phe	Leu	Asp	Leu	Ile	Pro	Met	Ile	Asp	Trp	Cys	Ile	Ser	Cys	Gly	Phe			
50					55					60								
Gln	Ile	Leu	Gln	Ile	Leu	Pro	Ile	Asn	Asp	Thr	Gly	Ser	Cys	Ser	Ser			
65				70					75					80				
Pro	Tyr	Asn	Ser	Ile	Ser	Ser	Ile	Ala	Leu	Asn	Pro	Leu	His	Leu	Ser			
			85					90					95					
Ile	Ser	Ala	Leu	Pro	Tyr	Lys	Glu	Glu	Val	Pro	Ala	Ala	Glu	Thr	Arg			
	100						105						110					
Ile	Arg	Glu	Met	Gln	Gln	Leu	Ser	Gln	Leu	Pro	Gln	Val	His	Tyr	Glu			
	115						120					125						
Lys	Val	Arg	Ser	Met	Lys	Arg	Asp	Phe	Phe	Gln	Glu	Tyr	Tyr	Arg	Val			
	130					135					140							
Cys	Lys	Gln	Lys	Lys	Leu	Thr	Asp	His	Pro	Asp	Phe	Tyr	Ala	Phe	Cys			
145				150					155					160				
Glu	Gln	Glu	Lys	Tyr	Trp	Leu	His	Pro	Tyr	Ala	Leu	Phe	Arg	Ser	Ile			
			165					170						175				
Arg	Glu	His	Leu	Asp	Asn	Leu	Pro	Ile	Asn	His	Trp	Pro	Thr	Thr	Tyr			
	180						185						190					
Thr	Asp	Leu	Ser	Gln	Ile	Thr	Glu	His	Glu	Arg	Thr	Phe	Ala	Glu	Asp			
	195					200						205						
Ile	Gln	Phe	His	Ser	Tyr	Leu	Gln	Tyr	Leu	Cys	Phe	Gln	Gln	Met	Thr			

210	215	220
Gln Val Arg Glu His Ala Asn Cys Lys Ser Cys Leu Ile Lys Gly Asp		
225	230	235
Ile Pro Ile Leu Ile Ser Lys Asp Ser Cys Asp Val Trp Phe Tyr Arg		
	245	250
His Tyr Phe Ser Ser Ser Glu Ser Val Gly Ala Pro Pro Asp Leu Tyr		
	260	265
Asn Ala Glu Gly Gln Asn Trp His Leu Pro Ile Cys Asn Met Lys Thr		
	275	280
Leu Gln Gln Asp Asn Tyr Leu Trp Trp Lys Glu Arg Leu Arg Tyr Ala		
	290	295
Glu Asn Phe Tyr Ser Leu Tyr Arg Leu Asp His Val Val Gly Leu Phe		
305	310	315
Arg Phe Trp Val Trp Asp Glu Ser Gly Cys Gly Arg Phe Glu Pro His		
	325	330
Asp Pro Lys Asn Tyr Leu Ala Gln Gly Gln Asp Ile Leu Ser His Leu		
	340	345
Leu Thr Ser Ser Ser Met Leu Pro Ile Gly Glu Asp Leu Gly Thr Ile		
	355	360
Pro Ser Asp Val Lys Arg Met Leu Glu Ser Phe Ala Val Cys Gly Thr		
	370	375
Arg Ile Pro Arg Trp Glu Arg Asn Trp Glu Gly Asn Gly Ala Tyr Thr		
385	390	395
Pro Phe Asp Gln Tyr Asp Pro Leu Ser Val Thr Ser Leu Ser Thr His		
	405	410
Asp Ser Ser Thr Leu Ala Ser Trp Trp Lys Glu Ser Pro Gln Glu Ser		
	420	425
Lys Leu Phe Ala Gln Phe Leu Gly Leu Pro Tyr Ser Ser Thr Leu Ser		
	435	440
Leu His Asn His Thr Glu Ile Leu Lys Leu Ser His Lys Thr Ser Ser		
	450	455
Ile Phe Arg Ile Asn Leu Ile Asn Asp Tyr Leu Ala Leu Phe Pro Asp		
465	470	475
Leu Ile Ser Lys Thr Pro Arg Tyr Glu Arg Ile Asn Leu Pro Gly Thr		
	485	490
Ile Ser Lys Asn Asn Trp Val Tyr Arg Val Lys Pro Ser Ile Glu Asp		
	500	505
Leu Ser Ser His Ser Lys Leu Asn Ser Leu Leu Glu Ala Leu Phe		
	515	520
		525

&lt;210&gt; 589

&lt;211&gt; 146

&lt;212&gt; PRT

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 589

Met Gln Asn Gln Phe Glu Gln Leu Leu Thr Glu Leu Gly Thr Gln Ile	
1	5
Asn Ser Pro Leu Thr Pro Asp Ser Asn Asn Ala Cys Ile Val Arg Phe	
	20
Gly Tyr Asn Asn Val Ala Val Gln Ile Glu Glu Asp Gly Asn Ser Gly	
	35
Phe Leu Val Ala Gly Val Met Leu Gly Lys Leu Pro Glu Asn Thr Phe	
	50
Arg Gln Lys Ile Phe Lys Ala Ala Leu Ser Ile Asn Gly Ser Pro Gln	
65	70
Ser Asn Ile Lys Gly Thr Leu Gly Tyr Gly Glu Ile Ser Asn Gln Leu	
	85
Tyr Leu Cys Asp Arg Leu Asn Met Thr Tyr Leu Asn Gly Glu Lys Leu	
	100
Ala Arg Tyr Leu Val Leu Phe Ser Gln His Ala Asn Ile Trp Met Gln	
	105
	110

115 120 125  
 Ser Ile Ser Lys Gly Ala Leu Pro Asp Leu His Ala Leu Gly Met Tyr  
 130 135 140  
 His Leu  
 145

<210> 590  
 <211> 650  
 <212> PRT  
 <213> C. Trachomatis D serovar

<400> 590  
 Met Thr Ile Pro Ile His Glu Asn Lys Tyr Ser Met Ile Ser Phe Thr  
 1 5 10 15  
 Arg Thr Ile Gly Phe Arg Leu Trp Leu Ile Cys Val Ala Ala Ile Met  
 20 25 30  
 Phe Pro Leu Gly Ile Asn Ile Leu Gln Leu Asn Leu Gln Tyr Lys  
 35 40 45  
 Lys Thr Leu Ser Ser Ile Thr Ser Asp Leu Arg Glu Asn Ala Leu Phe  
 50 55 60  
 Lys Ala His Thr Leu Gln Gln Thr Ile Pro Leu Asn Ile Asp Ile Leu  
 65 70 75 80  
 Ala Leu Phe Ser Glu Ile Phe Asp Leu Asp Arg Gly Val Pro Ala Glu  
 85 90 95  
 Pro Asp Leu Ala Leu Ser Lys Glu Met Glu Lys Ile Phe His Ser Thr  
 100 105 110  
 Tyr Lys Glu Ile Ser Leu Val Lys Lys Glu Ala Asp Gly Asn Phe Arg  
 115 120 125  
 Val Val Ala Ser Ser Arg Ile Glu Gln Leu Gly Lys Asn Tyr Asn Gln  
 130 135 140  
 Glu Ile Phe Leu Ser Asp Ser Gln Pro Phe Leu Ala Thr Leu Arg His  
 145 150 155 160  
 Ser Gly Ser Asp Ser Gln Val Leu Ala Val Leu Gln Thr Asn Ile Phe  
 165 170 175  
 Asp Ile Ser Ser Gln Glu Val Leu Gly Val Leu Tyr Thr Leu Ser Asp  
 180 185 190  
 Thr Asn Tyr Leu Leu Asn Gly Leu Leu Ala Ala Lys Asp Pro Leu Ser  
 195 200 205  
 Val Lys Thr Ala Ile Leu Ser Lys Asn Gly Ile Ile Leu Gln Ala Thr  
 210 215 220  
 Asp Ser Ser Leu Asp Leu Val Ser Ile His Lys Thr Val Ser Lys Glu  
 225 230 235 240  
 Gln Phe Cys Asp Val Phe Leu Arg Asp Asp Ile Cys Pro Pro His Leu  
 245 250 255  
 Leu Leu Arg Pro Pro Leu Asn Leu Asp Pro Leu Pro Tyr Gly Glu Asn  
 260 265 270  
 Phe Val Ser Phe Cys Ile Gly Asn Thr Glu Met Trp Gly Tyr Ile His  
 275 280 285  
 Ser Leu Pro Glu Met Asp Phe Arg Ile Leu Thr Tyr Glu Glu Lys Ser  
 290 295 300  
 Ile Ile Phe Ala Ser Leu Trp Arg Arg Thr Leu Leu Tyr Phe Ala Tyr  
 305 310 315 320  
 Phe Cys Cys Val Leu Leu Gly Ser Ile Thr Ala Phe Leu Val Ala Lys  
 325 330 335  
 Arg Leu Ser Lys Pro Ile Arg Lys Leu Ala Thr Ala Met Met Glu Thr  
 340 345 350  
 Arg Arg Asn Gln His His Pro Tyr Glu Pro Asp Ser Leu Gly Phe Glu  
 355 360 365  
 Ile Asn His Leu Gly Glu Ile Phe Asn Ser Met Val Gln Ser Leu Leu  
 370 375 380  
 Gln Gln Gln Ser Leu Ala Glu Lys Asn Phe Glu Ile Lys Gln His Ala

385	Gln	Asn	Ala	Leu	Arg	Leu	Gly	Glu	Glu	Ala	Gln	Gln	Cys	Leu	Leu	Pro
				405	Asp	Ser	Pro	Thr	Thr	410	Ile	Ala	Lys	Ala	Tyr	Ile
	Asn	Gln	Leu	Pro	420				425					430		
	Pro	Ala	Ile	Thr	Val	Gly	Gly	Asp	Phe	Phe	Asp	Ile	Phe	Val	Ile	Gly
				435				440					445			
	Glu	Gly	Pro	Gln	Ala	Lys	Leu	Phe	Leu	Ile	Val	Ala	Asp	Ala	Ser	Gly
		450					455					460				
	Lys	Gly	Val	Asn	Ala	Cys	Ala	Tyr	Ser	Leu	Phe	Leu	Lys	Asn	Met	Leu
	465					470					475				480	
	His	Thr	Phe	Leu	Ser	Glu	Leu	Ser	Ser	Ile	Gln	Glu	Ala	Val	Gln	Gln
				485						490					495	
	Thr	Ala	Ala	Leu	Phe	Tyr	Gln	Gln	Thr	Ala	Glu	Ser	Gly	Met	Phe	Val
				500					505					510		
	Thr	Leu	Cys	Ile	Tyr	Cys	Tyr	His	Tyr	Ala	Thr	Arg	Glu	Leu	Glu	Tyr
			515					520					525			
	Tyr	Ser	Cys	Gly	His	Asn	Pro	Ala	Cys	Leu	Arg	Ala	Pro	Asn	Gly	Asp
		530				535						540				
	Ile	Ser	Phe	Leu	Ser	His	Pro	Gly	Met	Ala	Leu	Gly	Phe	Leu	Pro	Glu
	545					550				555					560	
	Val	Pro	Pro	His	Pro	Ala	Tyr	Thr	Leu	Val	Leu	Glu	Glu	Glu	Ser	Leu
				565						570					575	
	Leu	Val	Leu	Tyr	Thr	Asp	Gly	Val	Thr	Glu	Ala	Ser	Asn	Lys	His	Gly
			580						585				590			
	Glu	Met	Phe	Gly	Glu	Glu	Arg	Leu	Lys	Ala	Leu	Val	Ala	Ser	Leu	Thr
			595					600					605			
	Lys	Gln	Ser	Ala	Glu	Glu	Ala	Ile	Gln	Ser	Ile	Met	Phe	Ser	Ile	Lys
		610					615					620				
	Ser	Phe	Val	Lys	Asp	Cys	Pro	Gln	His	Asp	Asp	Ile	Thr	Leu	Leu	Val
	625					630				635					640	
	Leu	Lys	Ile	Pro	Lys	Glu	Pro	Ser	Ala	Tyr						
				645						650						

&lt;210&gt; 591

&lt;211&gt; 313

&lt;212&gt; PRT

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 591

Met	Leu	Ser	Tyr	Ile	Lys	Arg	Arg	Leu	Leu	Phe	Asn	Leu	Leu	Ser	Leu
1				5				10						15	
Trp	Val	Val	Val	Thr	Leu	Thr	Phe	Phe	Ile	Ile	Lys	Thr	Ile	Pro	Gly
			20					25					30		
Asp	Pro	Phe	Asn	Asp	Glu	Asn	Gly	Asn	Ile	Leu	Ser	Ser	Glu	Thr	Leu
		35					40					45			
Ala	Leu	Leu	Lys	Asn	Arg	Tyr	Gly	Leu	Asp	Lys	Pro	Leu	Phe	Thr	Gln
	50					55					60				
Tyr	Leu	Ile	Tyr	Leu	Lys	Cys	Leu	Leu	Thr	Leu	Asp	Phe	Gly	Glu	Ser
65					70				75					80	
Leu	Ile	Tyr	Lys	Asp	Arg	Thr	Val	Ile	Ser	Ile	Ile	Ala	Ala	Ala	Leu
			85					90						95	
Pro	Ser	Ser	Ala	Ile	Leu	Gly	Leu	Glu	Ser	Leu	Cys	Leu	Ser	Leu	Phe
			100					105					110		
Gly	Gly	Ile	Thr	Leu	Gly	Ile	Leu	Ala	Ala	Phe	Tyr	Lys	Lys	Ser	Cys
		115					120					125			
Gly	Arg	Thr	Ile	Phe	Phe	Ser	Ser	Val	Ile	Gln	Ile	Ser	Val	Pro	Ala
	130					135				140					
Phe	Val	Ile	Gly	Ala	Phe	Leu	Gln	Tyr	Val	Phe	Ala	Ile	Lys	Tyr	Ser
145					150					155				160	
Cys	Leu	Pro	Ile	Ala	Cys	Trp	Gly	Asn	Phe	Ser	His	Thr	Leu	Leu	Pro

				165					170				175				
Ser	Ile	Ala	Leu	Ala	Ile	Thr	Pro	Met	Ala	Phe	Ile	Thr	Gln	Leu	Thr		
			180					185					190				
Cys	Ala	Ser	Val	Ser	Ala	Asn	Leu	Lys	Lys	Asp	Tyr	Val	Leu	Leu	Ala		
		195					200					205					
Tyr	Ala	Lys	Gly	Leu	Ser	Pro	Phe	Lys	Val	Leu	Ile	Lys	His	Ile	Leu		
	210					215				220							
Pro	Tyr	Ala	Leu	Phe	Pro	Val	Ile	Ser	Tyr	Ser	Ala	Phe	Leu	Ile	Thr		
225					230				235						240		
Thr	Leu	Met	Thr	Gly	Thr	Phe	Ser	Ile	Glu	Asn	Leu	Phe	Cys	Ile	Pro		
			245						250					255			
Gly	Leu	Gly	Lys	Trp	Phe	Ile	Cys	Ser	Ile	Lys	Gln	Arg	Asp	Tyr	Pro		
			260					265					270				
Ile	Thr	Leu	Gly	Leu	Ser	Val	Phe	Tyr	Gly	Ala	Phe	Phe	Met	Leu	Thr		
	275						280					285					
Ser	Leu	Cys	Cys	Asp	Leu	Leu	Gln	Ala	Trp	Ile	Asp	Pro	Gln	Ile	Arg		
	290				295						300						
Tyr	Ser	Tyr	Gly	Lys	Glu	Arg	Ser	Lys									
305					310												

&lt;210&gt; 592

&lt;211&gt; 1237

&lt;212&gt; PRT

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 592

Met	Thr	Trp	Ile	Pro	Leu	His	Cys	His	Ser	Gln	Tyr	Ser	Ile	Leu	Asp		
1				5				10					15				
Ala	Thr	Cys	Ser	Ile	Lys	Lys	Phe	Val	Ala	Lys	Ala	Val	Glu	Tyr	Gln		
		20					25					30					
Ile	Pro	Ala	Leu	Ala	Leu	Thr	Asp	His	Gly	Asn	Leu	Phe	Gly	Ala	Val		
	35					40					45						
Glu	Phe	Tyr	Lys	Thr	Cys	Lys	Gln	Asn	Ala	Ile	Lys	Pro	Ile	Ile	Gly		
	50				55					60							
Cys	Glu	Leu	Tyr	Val	Ala	Pro	Ser	Ser	Arg	Phe	Asp	Lys	Lys	Lys	Glu		
65				70					75						80		
Arg	Lys	Ser	Arg	Val	Ala	Asn	His	Leu	Ile	Leu	Leu	Cys	Lys	Asp	Glu		
			85					90					95				
Glu	Gly	Tyr	Arg	Asn	Leu	Cys	Leu	Leu	Ser	Ser	Leu	Ala	Tyr	Thr	Glu		
		100					105					110					
Gly	Phe	Tyr	Tyr	Val	Pro	Arg	Ile	Asp	Arg	Asp	Leu	Leu	Ser	Gln	His		
	115					120					125						
Ser	Lys	Gly	Leu	Ile	Cys	Leu	Ser	Ala	Cys	Leu	Ser	Gly	Ser	Val	Ala		
	130				135					140							
Gln	Ala	Ala	Leu	Glu	Ser	Glu	Glu	Asp	Leu	Glu	Lys	Asp	Leu	Leu	Trp		
145				150					155						160		
Tyr	Gln	Asp	Leu	Phe	Gln	Glu	Asp	Phe	Phe	Ser	Glu	Val	Gln	Leu	His		
		165						170						175			
Lys	Ser	Ser	Glu	Lys	Val	Ala	Leu	Phe	Glu	Glu	Thr	Trp	Leu	Lys			
		180					185					190					
Gln	Asn	Tyr	Tyr	Gln	Phe	Ile	Glu	Lys	Gln	Leu	Lys	Val	Asn	Glu	Ala		
	195					200						205					
Val	Leu	Ala	Thr	Ser	Lys	Arg	Leu	Gly	Ile	Pro	Ser	Val	Ala	Thr	Asn		
	210				215					220							
Asp	Ile	His	Tyr	Leu	Asn	Pro	Asp	Asp	Trp	Leu	Ala	His	Glu	Ile	Leu		
225				230					235						240		
Leu	Asn	Val	Gln	Ser	Arg	Glu	Pro	Ile	Arg	Thr	Ala	Lys	Gln	Asn	Thr		
			245						250					255			
Tyr	Ile	Pro	Asn	Pro	Lys	Arg	Lys	Thr	Tyr	Pro	Ser	Arg	Glu	Phe	Tyr		
		260					265						270				
Phe	Lys	Ser	Pro	Gln	Glu	Ile	Ala	Glu	Leu	Phe	Ala	Ala	His	Pro	Glu		

		275				280				285					
Thr	Ile	Thr	Asn	Thr	Cys	Ile	Val	Ala	Glu	Arg	Cys	His	Leu	Glu	Leu
	290					295					300				
Asp	Phe	Glu	Thr	Lys	His	Tyr	Pro	Ile	Tyr	Val	Pro	Glu	Ala	Leu	Gln
305					310					315					320
Lys	Lys	Gly	Ser	Tyr	Thr	Glu	Glu	Glu	Arg	Tyr	Lys	Ala	Ser	Ser	Ala
				325					330					335	
Phe	Leu	Glu	Glu	Leu	Cys	Glu	Gln	Gly	Leu	Thr	Ser	Lys	Tyr	Thr	Pro
			340					345					350		
Glu	Leu	Leu	Gly	His	Ile	Ala	Lys	Lys	Phe	Pro	Gly	Glu	Asp	Pro	Leu
		355					360					365			
Thr	Leu	Val	Lys	Glu	Arg	Leu	Lys	Leu	Glu	Ser	Ser	Ile	Ile	Ile	Ser
	370					375					380				
Lys	Gly	Met	Cys	Asp	Tyr	Leu	Leu	Ile	Val	Trp	Asp	Ile	Ile	Asn	Trp
385					390					395					400
Ala	Lys	Asp	His	Gly	Ile	Pro	Val	Gly	Pro	Gly	Arg	Gly	Ser	Gly	Ala
				405					410					415	
Gly	Ser	Val	Met	Leu	Phe	Leu	Leu	Gly	Ile	Thr	Glu	Ile	Glu	Pro	Ile
			420					425					430		
Arg	Phe	Asp	Leu	Phe	Phe	Glu	Arg	Phe	Ile	Asn	Pro	Glu	Arg	Ile	Ser
	435					440						445			
Tyr	Pro	Asp	Ile	Asp	Ile	Asp	Ile	Cys	Met	Ile	Gly	Arg	Glu	Arg	Val
	450				455						460				
Ile	Asn	Tyr	Ala	Ile	Glu	Arg	His	Gly	Lys	Asp	Asn	Val	Ala	Gln	Ile
465					470					475					480
Ile	Thr	Phe	Gly	Thr	Met	Lys	Ala	Lys	Met	Ala	Ile	Lys	Asp	Val	Gly
			485					490						495	
Arg	Thr	Leu	Asp	Thr	Pro	Leu	Ala	Lys	Val	Asn	Phe	Ile	Ala	Lys	His
		500					505						510		
Ile	Pro	Asp	Leu	Asn	Ala	Thr	Ile	Thr	Ser	Ala	Leu	Glu	Ala	Asp	Pro
	515					520						525			
Glu	Leu	Arg	Gln	Leu	Tyr	Val	Asp	Asp	Ala	Glu	Ala	Ala	Glu	Val	Ile
	530					535					540				
Asp	Met	Ala	Lys	Lys	Leu	Glu	Gly	Ser	Ile	Arg	Asn	Thr	Gly	Val	His
545					550					555					560
Ala	Ala	Gly	Val	Ile	Ile	Cys	Gly	Asp	Pro	Leu	Thr	Asn	His	Ile	Pro
			565					570						575	
Ile	Cys	Val	Pro	Lys	Asp	Ser	Ser	Met	Ile	Ser	Thr	Gln	Tyr	Ser	Met
		580					585						590		
Lys	Pro	Val	Glu	Ser	Val	Gly	Met	Leu	Lys	Val	Asp	Phe	Leu	Gly	Leu
	595					600						605			
Lys	Thr	Leu	Thr	Gly	Ile	His	Ile	Ala	Thr	Gln	Ala	Ile	Tyr	Lys	Lys
	610				615						620				
Thr	Gly	Ile	Leu	Leu	Arg	Ala	Ala	Thr	Ile	Pro	Leu	Asp	Asp	Gln	Asn
625					630					635					640
Thr	Phe	Ser	Leu	Leu	His	Gln	Gly	Lys	Thr	Met	Gly	Ile	Phe	Gln	Met
			645					650						655	
Glu	Ser	Arg	Gly	Met	Gln	Asp	Leu	Ala	Lys	Asn	Leu	Arg	Pro	Asp	Ala
		660					665						670		
Phe	Glu	Glu	Ile	Ile	Ala	Ile	Gly	Ala	Leu	Tyr	Arg	Pro	Gly	Pro	Met
	675						680					685			
Asp	Met	Ile	Pro	Ser	Phe	Ile	Asn	Arg	Lys	His	Gly	Lys	Glu	Asn	Ile
	690					695					700				
Glu	Tyr	Asp	His	Pro	Leu	Met	Glu	Pro	Ile	Leu	Lys	Glu	Thr	Phe	Gly
705					710					715					720
Ile	Met	Val	Tyr	Gln	Glu	Gln	Val	Met	Gln	Ile	Ala	Gly	Ser	Leu	Ala
			725						730					735	
Lys	Tyr	Ser	Leu	Gly	Glu	Gly	Asp	Val	Leu	Arg	Arg	Ala	Met	Gly	Lys
		740					745						750		
Lys	Asp	His	Glu	Gln	Met	Val	Lys	Glu	Arg	Glu	Lys	Phe	Cys	Ser	Arg
	755						760					765			



Ala Ala Ala Asn Gly Ile Asp Pro Ser Ile Ala Thr Thr Ile Phe Asp  
 770 775 780  
 Lys Met Glu Lys Phe Ala Ser Tyr Gly Phe Asn Lys Ser His Ala Ala  
 785 790 795 800  
 Ala Tyr Gly Leu Ile Thr Tyr Thr Thr Ala Tyr Leu Lys Ala Asn Tyr  
 805 810 815  
 Pro Lys Glu Trp Leu Ala Ala Leu Leu Thr Cys Asp Tyr Asp Asp Ile  
 820 825 830  
 Glu Lys Val Gly Lys Leu Ile Gln Glu Ala His Ser Met Asn Ile Leu  
 835 840 845  
 Val Leu Pro Pro Asp Ile Asn Glu Ser Gly Gln Asp Phe Glu Ala Thr  
 850 855 860  
 Gln Lys Gly Ile Arg Phe Ser Leu Gly Ala Val Lys Gly Val Gly Met  
 865 870 875 880  
 Ser Ile Val Asp Ser Ile Val Glu Glu Arg Glu Lys Asn Gly Pro Tyr  
 885 890 895  
 Lys Ser Leu Gln Asp Phe Val Gln Arg Ala Asp Phe Lys Lys Val Thr  
 900 905 910  
 Lys Lys Gln Leu Glu Asn Leu Val Asp Ala Gly Thr Phe Asp Cys Phe  
 915 920 925  
 Glu Pro Asn Lys Asp Leu Ala Leu Ala Ile Leu Asn Asp Leu Tyr Asp  
 930 935 940  
 Thr Phe Ser Arg Glu Lys Lys Glu Ala Ala Thr Gly Val Leu Thr Phe  
 945 950 955 960  
 Phe Ser Leu Asp Ser Met Ala Arg Asp Pro Val Lys Ile Thr Val Ser  
 965 970 975  
 Pro Glu Asn Val Ile Gln Arg Ser Pro Lys Glu Leu Leu Lys Arg Glu  
 980 985 990  
 Lys Glu Leu Leu Gly Val Tyr Leu Thr Ala His Pro Met Asp Ala Val  
 995 1000 1005  
 Glu His Met Leu Pro Phe Leu Ser Val Val Pro Ala Arg Asp Phe Glu  
 1010 1015 1020  
 Gly Leu Pro His Gly Thr Ile Ile Arg Thr Val Phe Leu Ile Asp Lys  
 1025 1030 1035 1040  
 Val Thr Thr Lys Ile Ser Ser Ala Glu Gln Lys Lys Phe Ala Leu Leu  
 1045 1050 1055  
 Gln Val Ser Asp Glu Val Asp Ser Tyr Glu Leu Pro Ile Trp Ala Asp  
 1060 1065 1070  
 Met Tyr Ala Glu Tyr Arg Asp Leu Leu Glu Glu Asp Arg Leu Ile Tyr  
 1075 1080 1085  
 Ala Ile Leu Ala Ile Asp Arg Arg Ser Asp Ser Leu Arg Leu Ser Cys  
 1090 1095 1100  
 Arg Trp Met Arg Asp Leu Ser Thr Val Asn Asp Ser Val Ile Ala Glu  
 1105 1110 1115 1120  
 Cys Asp Glu Val Tyr Asp Arg Leu Lys Ser Gln Lys Val Tyr Ser Ser  
 1125 1130 1135  
 Thr Lys Lys Ser Thr Gly Ala Gln Ser Ser Ala Met Ile Lys Lys Val  
 1140 1145 1150  
 Glu Thr Arg Glu Ile Ser Pro Val Thr Ile Ser Leu Asp Leu Asn Lys  
 1155 1160 1165  
 Leu Arg His Ser His Leu Phe Ile Leu Lys Gly Leu Ile Arg Lys Tyr  
 1170 1175 1180  
 Ser Gly Ser Gln Ala Leu Ser Leu Val Phe Thr Lys Asp Asn Gln Arg  
 1185 1190 1195 1200  
 Phe Ala Ser Ile Ser Pro Asp Ala Asp Phe Phe Val Thr Asp Asp Ile  
 1205 1210 1215  
 Ser Ser Leu Leu Gln Glu Ile Glu Ala Thr Asn Ile Pro Ala Arg Val  
 1220 1225 1230  
 Leu Ala Thr Thr Val  
 1235

&lt;210&gt; 593

&lt;211&gt; 563

&lt;212&gt; PRT

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 593

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Met Val Tyr Phe Arg Ala His Gln Pro Arg His Thr Pro Lys Thr Phe
 1          5          10          15
Pro Leu Glu Val His His Ser Phe Ser Asp Lys His Pro Gln Ile Ala
 20          25          30
Lys Ala Met Arg Ile Thr Gly Ile Ala Leu Ala Ala Leu Ser Leu Leu
 35          40          45
Ala Val Val Ala Cys Val Ile Ala Val Ser Ala Gly Gly Ala Ala Ile
 50          55          60
Pro Leu Ala Val Ile Ser Gly Ile Ala Val Met Ser Gly Leu Leu Ser
 65          70          75
Ala Ala Thr Ile Ile Cys Ser Ala Lys Lys Ala Leu Ala Gln Arg Lys
 85          90          95
Gln Lys Gln Leu Glu Glu Ser Leu Pro Leu Asp Asn Ala Thr Glu His
100          105          110
Val Ser Tyr Leu Thr Ser Asp Thr Ser Tyr Phe Asn Gln Trp Glu Ser
115          120          125
Leu Gly Ala Leu Asn Lys Gln Leu Ser Gln Ile Asp Leu Thr Ile Gln
130          135          140
Ala Pro Glu Lys Lys Leu Leu Lys Glu Val Leu Gly Ser Arg Tyr Asp
145          150          155
Ser Ile Asn His Ser Ile Glu Glu Ile Ser Asp Arg Phe Thr Lys Met
165          170          175
Leu Ser Leu Leu Arg Leu Arg Glu His Phe Tyr Arg Gly Glu Glu Arg
180          185          190
Tyr Ala Pro Tyr Leu Ser Pro Pro Leu Leu Asn Lys Asn Arg Leu Leu
195          200          205
Thr Gln Ile Thr Ser Asn Met Ile Arg Met Leu Pro Lys Ser Gly Gly
210          215          220
Val Phe Ser Leu Lys Ala Asn Thr Leu Ser His Ala Ser Arg Thr Leu
225          230          235
Tyr Thr Val Leu Lys Val Ala Leu Ser Leu Gly Val Leu Ala Gly Val
245          250          255
Ala Ala Leu Ile Ile Phe Leu Pro Pro Ser Leu Pro Phe Ile Ala Val
260          265          270
Ile Gly Val Ser Ser Leu Ala Leu Gly Met Ala Ser Phe Leu Met Ile
275          280          285
Arg Gly Ile Lys Tyr Leu Leu Glu His Ser Pro Leu Asn Arg Lys Gln
290          295          300
Leu Ala Lys Asp Ile Gln Lys Thr Ile Gly Pro Asp Val Leu Ala Ser
305          310          315
Met Val His Tyr Gln His Gln Leu Leu Ser His Leu His Glu Thr Leu
325          330          335
Leu Asp Glu Ala Ile Thr Ala Arg Trp Ser Glu Pro Phe Phe Ile Glu
340          345          350
His Ala Asn Leu Lys Ala Lys Ile Glu Asp Leu Thr Lys Gln Tyr Asp
355          360          365
Ile Leu Asn Ala Ala Phe Asn Lys Ser Leu Gln Gln Asp Glu Ala Leu
370          375          380
Arg Ser Gln Leu Glu Lys Arg Ala Tyr Leu Phe Pro Ile Pro Asn Asn
385          390          395
Asp Glu Asn Ala Lys Thr Lys Glu Ser Gln Leu Leu Asp Ser Glu Asn
405          410          415
Asp Ser Asn Ser Glu Phe Gln Glu Ile Ile Asn Lys Gly Leu Glu Ala
420          425          430
Ala Asn Lys Arg Arg Ala Asp Ala Lys Ser Lys Phe Tyr Thr Glu Asp

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435	440	445
Glu Thr Ser Asp Lys Ile Phe Ser Ile Trp Lys Pro Thr Lys Asn Leu		
450	455	460
Ala Leu Glu Asp Leu Trp Arg Val His Glu Ala Cys Asn Glu Glu Gln		
465	470	475
Gln Ala Leu Leu Leu Glu Asp Tyr Met Ser Tyr Lys Thr Ser Glu Cys		
	485	490
Gln Ala Ala Leu Gln Lys Val Ser Gln Glu Leu Lys Ala Ala Gln Lys		
	500	505
Ser Phe Ala Val Leu Glu Lys His Ala Leu Asp Arg Ser Tyr Glu Ser		
	515	520
Ser Val Ala Thr Met Asp Leu Ala Arg Ala Asn Gln Glu Thr His Arg		
	530	535
Leu Leu Asn Ile Leu Ser Glu Leu Gln Gln Leu Ala Gln Tyr Leu Leu		
545	550	555
Asp Asn His		560

&lt;210&gt; 594

&lt;211&gt; 1751

&lt;212&gt; PRT

&lt;213&gt; C. Trachomatis D serovar

&lt;400&gt; 594

Met Lys Trp Leu Ser Ala Thr Ala Val Phe Ala Ala Val Leu Pro Ser	
1 5 10 15	
Val Ser Gly Phe Cys Phe Pro Glu Pro Lys Glu Leu Asn Phe Ser Arg	
20 25 30	
Val Gly Thr Ser Ser Ser Thr Thr Phe Thr Glu Thr Val Gly Glu Ala	
35 40 45	
Gly Ala Glu Tyr Ile Val Ser Gly Asn Ala Ser Phe Thr Lys Phe Thr	
50 55 60	
Asn Ile Pro Thr Thr Asp Thr Thr Thr Pro Thr Asn Ser Asn Ser Ser	
65 70 75 80	
Ser Ser Asn Gly Glu Thr Ala Ser Val Ser Glu Asp Ser Asp Ser Thr	
85 90 95	
Thr Thr Thr Pro Asp Pro Lys Gly Gly Gly Ala Phe Tyr Asn Ala His	
100 105 110	
Ser Gly Val Leu Ser Phe Met Thr Arg Ser Gly Thr Glu Gly Ser Leu	
115 120 125	
Thr Leu Ser Glu Ile Lys Ile Thr Gly Glu Gly Gly Ala Ile Phe Ser	
130 135 140	
Gln Gly Glu Leu Leu Phe Thr Asp Leu Thr Gly Leu Thr Ile Gln Asn	
145 150 155 160	
Asn Leu Ser Gln Leu Ser Gly Gly Ala Ile Phe Gly Glu Ser Thr Ile	
165 170 175	
Ser Leu Ser Gly Ile Thr Lys Ala Thr Phe Ser Ser Asn Ser Ala Glu	
180 185 190	
Val Pro Ala Pro Val Lys Lys Pro Thr Glu Pro Lys Ala Gln Thr Ala	
195 200 205	
Ser Glu Thr Ser Gly Ser Ser Ser Ser Ser Gly Asn Asp Ser Val Ser	
210 215 220	
Ser Pro Ser Ser Ser Arg Ala Glu Pro Ala Ala Ala Asn Leu Gln Ser	
225 230 235 240	
His Phe Ile Cys Ala Thr Ala Thr Pro Ala Ala Gln Thr Asp Thr Glu	
245 250 255	
Thr Ser Thr Pro Ser His Lys Pro Gly Ser Gly Gly Ala Ile Tyr Ala	
260 265 270	
Lys Gly Asp Leu Thr Ile Ala Asp Ser Gln Glu Val Leu Phe Ser Ile	
275 280 285	
Asn Lys Ala Thr Lys Asp Gly Gly Ala Ile Phe Ala Glu Lys Asp Val	

290	295	300
Ser Phe Glu Asn Ile Thr	Ser Leu Lys Val Gln Thr Asn Gly Ala Glu	
305	310	315
Glu Lys Gly Gly Ala Ile Tyr Ala Lys Gly Asp Leu Ser Ile Gln Ser		320
	325	330
Ser Lys Gln Ser Leu Phe Asn Ser Asn Tyr Ser Lys Gln Gly Gly Gly		335
	340	345
Ala Leu Tyr Val Glu Gly Asp Ile Asn Phe Gln Asp Leu Glu Glu Ile		350
	355	360
Arg Ile Lys Tyr Asn Lys Ala Gly Thr Phe Glu Thr Lys Lys Ile Thr		365
	370	375
Leu Pro Lys Ala Gln Ala Ser Ala Gly Asn Ala Asp Ala Trp Ala Ser		380
385	390	395
Ser Ser Pro Gln Ser Gly Ser Gly Ala Thr Thr Val Ser Asn Ser Gly		400
	405	410
Asp Ser Ser Ser Gly Ser Asp Ser Asp Thr Ser Glu Thr Val Pro Ala		415
	420	425
Thr Ala Lys Gly Gly Gly Leu Tyr Thr Asp Lys Asn Leu Ser Ile Thr		430
	435	440
Asn Ile Thr Gly Ile Ile Glu Ile Ala Asn Asn Lys Ala Thr Asp Val		445
	450	455
Gly Gly Gly Ala Tyr Val Lys Gly Thr Leu Thr Cys Glu Asn Ser His		460
465	470	475
Arg Leu Gln Phe Leu Lys Asn Ser Ser Asp Lys Gln Gly Gly Gly Ile		480
	485	490
Tyr Gly Glu Asp Asn Ile Thr Leu Ser Asn Leu Thr Gly Lys Thr Leu		495
	500	505
Phe Gln Glu Asn Thr Ala Lys Glu Glu Gly Gly Gly Leu Phe Ile Lys		510
	515	520
Gly Thr Asp Lys Ala Leu Thr Met Thr Gly Leu Asp Ser Phe Cys Leu		525
	530	535
Ile Asn Asn Thr Ser Glu Lys His Gly Gly Gly Ala Phe Val Thr Lys		540
545	550	555
Glu Ile Ser Gln Thr Tyr Thr Ser Asp Val Glu Thr Ile Pro Gly Ile		560
	565	570
Thr Pro Val His Gly Glu Thr Val Ile Thr Gly Asn Lys Ser Thr Gly		575
	580	585
Gly Asn Gly Gly Gly Val Cys Thr Lys Arg Leu Ala Leu Ser Asn Leu		590
	595	600
Gln Ser Ile Ser Ile Ser Gly Asn Ser Ala Ala Glu Asn Gly Gly Gly		605
	610	615
Ala His Thr Cys Pro Asp Ser Phe Pro Thr Ala Asp Thr Ala Glu Gln		620
625	630	635
Pro Ala Ala Ala Ser Ala Ala Thr Ser Thr Pro Glu Ser Ala Pro Val		640
	645	650
Val Ser Thr Ala Leu Ser Thr Pro Ser Ser Ser Thr Val Ser Ser Leu		655
	660	665
Thr Leu Leu Ala Ala Ser Ser Gln Ala Ser Pro Ala Thr Ser Asn Lys		670
	675	680
Glu Thr Gln Asp Pro Asn Ala Asp Thr Asp Leu Leu Ile Asp Tyr Val		685
	690	695
Val Asp Thr Thr Ile Ser Lys Asn Thr Ala Lys Lys Gly Gly Gly Ile		700
705	710	715
Tyr Ala Lys Lys Ala Lys Met Ser Arg Ile Asp Gln Leu Asn Ile Ser		720
	725	730
Glu Asn Ser Ala Thr Glu Ile Gly Gly Gly Ile Cys Cys Lys Glu Ser		735
	740	745
Leu Glu Leu Asp Ala Leu Val Ser Leu Ser Val Thr Glu Asn Leu Val		750
	755	760
Gly Lys Glu Gly Gly Gly Leu His Ala Lys Thr Val Asn Ile Ser Asn		765
770	775	780

Leu 785	Lys	Ser	Gly	Phe 790	Ser	Phe	Ser	Asn	Asn	Lys 795	Ala	Asn	Ser	Ser	Ser	800
Thr	Gly	Val	Ala	Thr 805	Thr	Ala	Ser	Ala	Pro	Ala 810	Ala	Ala	Ala	Ala	Ala	Ser 815
Leu	Gln	Ala	Ala	Ala 820	Ala	Ala	Val	Pro	Ser	Ser 825	Pro	Ala	Thr	Pro	Thr	
Tyr	Ser	Gly	Val	Val 835	Gly	Gly	Ala	Ile	Tyr	Gly 840	Glu	Lys	Val	Thr	Phe	
Ser	Gln	Cys	Ser	Gly 850	Thr	Cys	Gln	Phe	Ser	Gly 855	Asn	Gln	Ala	Ile	Asp	
Asn	Asn	Pro	Ser	Gln 865	Ser	Leu	Asn	Val	Gln	Gly 870	Gly	Ala	Ile	Tyr		
Ala	Lys	Thr	Ser	Leu 885	Ser	Ile	Gly	Ser	Ser	Asp 890	Ala	Gly	Thr	Ser	Tyr	
Ile	Phe	Ser	Gly	Asn 900	Ser	Val	Ser	Thr	Gly	Lys 905	Ser	Gln	Thr	Thr	Gly	
Gln	Ile	Ala	Gly	Gly 915	Ala	Ile	Tyr	Ser	Pro	Thr 920	Val	Thr	Leu	Asn	Cys	
Pro	Ala	Thr	Phe	Ser 930	Asn	Asn	Thr	Ala	Ser	Met 935	Ala	Thr	Pro	Lys	Thr	
Ser	Ser	Glu	Asp	Gly 945	Ser	Ser	Gly	Asn	Ser	Ile 950	Lys	Asp	Thr	Ile	Gly	
Gly	Ala	Ile	Ala	Gly 965	Thr	Ala	Ile	Thr	Leu	Ser 970	Gly	Val	Ser	Arg	Phe	
Ser	Gly	Asn	Thr	Ala 980	Asp	Leu	Gly	Ala	Ala	Ile 985	Gly	Thr	Leu	Ala	Asn	
Ala	Asn	Thr	Pro	Ser 995	Ala	Thr	Ser	Gly	Ser	Gln 1000	Asn	Ser	Ile	Thr	Glu	
Lys	Ile	Thr	Leu	Glu 1010	Asn	Gly	Ser	Phe	Ile	Phe 1015	Glu	Arg	Asn	Gln	Ala	
Asn	Lys	Arg	Gly	Ala 1025	Ile	Tyr	Ser	Pro	Ser	Val 1030	Ser	Ile	Lys	Gly	Asn	
Asn	Ile	Thr	Phe	Asn 1045	Gln	Asn	Thr	Ser	Thr	His 1050	Asp	Gly	Ser	Ala	Ile	
Tyr	Phe	Thr	Lys	Asp 1060	Ala	Thr	Ile	Glu	Ser	Leu 1065	Gly	Ser	Val	Leu	Phe	
Thr	Gly	Asn	Asn	Val 1075	Thr	Ala	Thr	Gln	Ala	Ser 1080	Ser	Ala	Thr	Ser	Gly	
Gln	Asn	Thr	Asn	Thr 1090	Ala	Asn	Tyr	Gly	Ala	Ala 1095	Ile	Phe	Gly	Asp	Pro	
Gly	Thr	Thr	Gln	Ser 1105	Ser	Gln	Thr	Asp	Ala	Ile 1110	Leu	Thr	Leu	Leu	Ala	
Ser	Ser	Gly	Asn	Ile 1125	Thr	Phe	Ser	Asn	Asn	Ser 1130	Leu	Gln	Asn	Asn	Gln	
Gly	Asp	Thr	Pro	Ala 1140	Ser	Lys	Phe	Cys	Ser	Ile 1145	Ala	Gly	Tyr	Val	Lys	
Leu	Ser	Leu	Gln	Ala 1155	Ala	Lys	Gly	Lys	Thr	Ile 1160	Ser	Phe	Phe	Asp	Cys	
Val	His	Thr	Ser	Thr 1170	Lys	Lys	Ile	Gly	Ser	Thr 1175	Gln	Asn	Val	Tyr	Glu	
Thr	Leu	Asp	Ile	Asn 1185	Lys	Glu	Glu	Asn	Ser	Asn 1190	Pro	Tyr	Thr	Gly	Thr	
Ile	Val	Phe	Ser	Ser 1205	Glu	Leu	His	Glu	Asn	Lys 1210	Ser	Tyr	Ile	Pro	Gln	
Asn	Ala	Ile	Leu	His 1220	Asn	Gly	Thr	Leu	Val	Leu 1225	Lys	Glu	Lys	Thr	Glu	
Leu	His	Val	Val	Ser 1235	Phe	Glu	Gln	Lys	Glu	Gly 1240	Ser	Lys	Leu	Ile	Met	
Lys	Pro	Gly	Ala	Val 1250	Leu	Ser	Asn	Gln	Asn	Ile 1255	Ala	Asn	Gly	Ala	Leu	
Val	Ile	Asn	Gly	Leu 1260	Thr	Ile	Asp	Leu	Ser	Ser 1260	Met	Gly	Thr	Pro	Gln	

1265		1270		1275		1280
Ala Gly Glu Ile Phe Ser Pro Pro Glu Leu Arg Ile Val Ala Thr Thr						
	1285			1290		1295
Ser Ser Ala Ser Gly Gly Ser Gly Val Ser Ser Ser Ile Pro Thr Asn						
	1300			1305		1310
Pro Lys Arg Ile Ser Ala Ala Ala Pro Ser Gly Ser Ala Ala Thr Thr						
	1315			1320		1325
Pro Thr Met Ser Glu Asn Lys Val Phe Leu Thr Gly Asp Leu Thr Leu						
	1330			1335		1340
Ile Asp Pro Asn Gly Asn Phe Tyr Gln Asn Pro Met Leu Gly Ser Asp						
1345		1350		1355		1360
Leu Asp Val Pro Leu Ile Lys Leu Pro Thr Asn Thr Ser Asp Val Gln						
	1365			1370		1375
Val Tyr Asp Leu Thr Leu Ser Gly Asp Leu Phe Pro Gln Lys Gly Tyr						
	1380			1385		1390
Met Gly Thr Trp Thr Leu Asp Ser Asn Pro Gln Thr Gly Lys Leu Gln						
	1395			1400		1405
Ala Arg Trp Thr Phe Asp Thr Tyr Arg Arg Trp Val Tyr Ile Pro Arg						
	1410			1415		1420
Asp Asn His Phe Tyr Ala Asn Ser Ile Leu Gly Ser Gln Asn Ser Met						
1425		1430		1435		1440
Ile Val Val Lys Gln Gly Leu Ile Asn Asn Met Leu Asn Asn Ala Arg						
	1445			1450		1455
Phe Asp Asp Ile Ala Tyr Asn Asn Phe Trp Val Ser Gly Val Gly Thr						
	1460			1465		1470
Phe Leu Ala Gln Gln Gly Thr Pro Leu Ser Glu Glu Phe Ser Tyr Tyr						
	1475			1480		1485
Ser Arg Gly Thr Ser Val Ala Ile Asp Ala Lys Pro Arg Gln Asp Phe						
	1490			1495		1500
Ile Leu Gly Ala Ala Phe Ser Lys Met Val Gly Lys Thr Lys Ala Ile						
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Lys Lys Met His Asn Tyr Phe His Lys Gly Ser Glu Tyr Ser Tyr Gln						
	1525			1530		1535
Ala Ser Val Tyr Gly Gly Lys Phe Leu Tyr Phe Leu Leu Asn Lys Gln						
	1540			1545		1550
His Gly Trp Ala Leu Pro Phe Leu Ile Gln Gly Val Val Ser Tyr Gly						
	1555			1560		1565
His Ile Lys His Asp Thr Thr Thr Leu Tyr Pro Ser Ile His Glu Arg						
	1570			1575		1580
Asn Lys Gly Asp Trp Glu Asp Leu Gly Trp Leu Ala Asp Leu Arg Ile						
1585		1590		1595		1600
Ser Met Asp Leu Lys Glu Pro Ser Lys Asp Ser Ser Lys Arg Ile Thr						
	1605			1610		1615
Val Tyr Gly Glu Leu Glu Tyr Ser Ser Ile Arg Gln Lys Gln Phe Thr						
	1620			1625		1630
Glu Ile Asp Tyr Asp Pro Arg His Phe Asp Asp Cys Ala Tyr Arg Asn						
	1635			1640		1645
Leu Ser Leu Pro Val Gly Cys Ala Val Glu Gly Ala Ile Met Asn Cys						
	1650			1655		1660
Asn Ile Leu Met Tyr Asn Lys Leu Ala Leu Ala Tyr Met Pro Ser Ile						
1665		1670		1675		1680
Tyr Arg Asn Asn Pro Val Cys Lys Tyr Arg Val Leu Ser Ser Asn Glu						
	1685			1690		1695
Ala Gly Gln Val Ile Cys Gly Val Pro Thr Arg Thr Ser Ala Arg Ala						
	1700			1705		1710
Glu Tyr Ser Thr Gln Leu Tyr Leu Gly Pro Phe Trp Thr Leu Tyr Gly						
	1715			1720		1725
Asn Tyr Thr Ile Asp Val Gly Met Tyr Thr Leu Ser Gln Met Thr Ser						
	1730			1735		1740
Cys Gly Ala Arg Met Ile Phe						
1745		1750				

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 <211> 900  
 <212> DNA  
 <213> *Chlamydia pneumoniae*

<400> 595  
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 ggatatggct ggggtattgc taaacttctt gcagaagcag gagctacgat tattgtagga 120  
 acatgggtac cgatttacia aattttctct cagtcttggg aattaggaaa attcaatgaa 180  
 tctagaaaaat tatcgaatgg cactctctta gagattgcta agatctatcc catggacgca 240  
 agtttttgata gccctgaaga tgttcctgaa gatattgctg aaaataaacg ttacaagggc 300  
 attacgggat tcacgatata agaagtcgca gaacaggtaa aaaaagattt tggcatatt 360  
 gacattcttg tccactcgct ggcaaatagt cctgaaattt ctaagtctct attagaaaca 420  
 tcaagaaaag gttacttagc ggctctcagt gcctctagtt attcttttgt tagccttctc 480  
 tctcactttg gaagtatcat gaaccgtggg ggatcgacaa tatcgctcac ctatttggct 540  
 tctatgogcg ctgttcctgg atacggaggg ggcattgagt cggcaaaagc agctttggaa 600  
 agtgacacca aaactcttgc ttgggaagcg ggacgccgtt ggggcatacg tgtcaatacc 660  
 atctctgcag gaccttttagc aagccgagct ggaaaagcaa ttggttttat tgaaagaatg 720  
 gtagactatt accaagagtg ggcgcctatt cccgaggcta tgaatgccga gcaggtgggt 780  
 gccgttgtag ctttcttagc atcacctcta gcttcagcaa ttactgggtg gaccttatac 840  
 gtagatcacg gagccaatgt gatgggaatt ggtcctgaga tgttccctaa agactcataa 900

<210> 596  
 <211> 1743  
 <212> DNA  
 <213> *Chlamydia pneumoniae*

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 ctacagaag acgttgccga atttaaagat ttgctttata cggcacacag aattacttcg 120  
 agcgaagaag aatctgataa cgaaatacag cctggcgcca tcctaaaagg taccgtagtt 180  
 gatattaata aagactttgt cgtagttgat gttggtctga agtctgaggg agtgatccct 240  
 atgtcagagt tcatagactc ttcagaaggt ttagtgcttg gagctgaagt agaagtctat 300  
 ctcgaccaag ccgaagacga agagggcaaa gttgtccttt ctagagaaaa agccacacga 360  
 caacgtcaat gggaatacat cttagctcat tgtgaagaag gttctattgt taaagggtcaa 420  
 attacacgta aagtcaaagg cggccttatt gtagatattg gaatggaagc cttcctacct 480  
 ggatcacaaa ttgacaacaa gaaaatcaaa aatttagatg attatgtcgg aaaagtttgt 540  
 gaattcaaaa ttttaaaaat taacgttgaa cgtcgcaata ttgttgctc aagaagagaa 600  
 ctcttagaag ctgagagaat ctctaagaaa gccgaactta ttgaacaaat ttctatcgga 660  
 gaataccgca aaggagttgt taaaaacatt actgactttg gtgtattctt agatctcgat 720  
 ggtattgacg gtcttctcca cattaccgat atgacctgga agcgcatacg acatccttcc 780  
 gaaatggctg aattgaatca agagttggaa gtaattattt taagcgtaga taaagaaaaa 840  
 ggacgagttg ctctaggtct caaacaaaaa gagcataatc cttgggaaga tattgagaag 900  
 aaataccctc ctggaaaacg agttcttggg aaaaattgtg agcttctccc ctacggagct 960  
 ttcataggaa ttgaagaggg cattgaaggt ctaattcaca tttctgaaat gtcttgggtg 1020  
 aaaaatattg tagatcctag tgaagtcgta aataaaggcg atgaagttga agccattgtt 1080  
 ctatctattc agaaggacga aggaaaaatt tctctaggat taaagcaaac agaacgtaat 1140  
 ccttgggaca atatcgaaga aaaatatcct ataggtctcc atgtcaatgc tgaaatcaag 1200  
 aacttaacca attacggtgc tttcgttgaa ttgaaccag gaattgaggg tctgattcat 1260  
 atttctgaca tgagttggat taaaaaagtc tctcaccctt cagaactatt caaaaaagga 1320  
 aattctgtag aggtgtttat tttatcagta gacaaaagaa gtaaaaaaat tactttagga 1380  
 gttaagcaat taagttctaa tccttggaaat gaaattgaag ctatgttccc tgctggcaca 1440  
 gtaatttcag gagttgtgac taaaatcact gcatttgag cctttgttga gctacaaaac 1500  
 gggattgaag gattgattca cgtttcagaa ctttctgaca agccctttgc aaaaattgaa 1560  
 gatattatct ccattggaga aaatgtttct gcaaaaagtaa ttaagctaga tccagatcat 1620  
 aaaaaagttt ctctttctgt aaaagaatac ttagctgaca atgcttatga tcaagactct 1680  
 aggactgaat tagatttcaa ggattctcaa ggcctaaag agagaaagaa aaaaggaaaa 1740  
 tag 1743

&lt;210&gt; 597

&lt;211&gt; 299

&lt;212&gt; PRT

&lt;213&gt; Chlamydia pneumoniae

&lt;400&gt; 597

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Met Leu Lys Ile Asp Leu Thr Gly Lys Val Ala Phe Val Ala Gly Ile
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Gly Asp Asp Gln Gly Tyr Gly Trp Gly Ile Ala Lys Leu Leu Ala Glu
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Ala Gly Ala Thr Ile Ile Val Gly Thr Trp Val Pro Ile Tyr Lys Ile
      35                      40                      45

Phe Ser Gln Ser Trp Glu Leu Gly Lys Phe Asn Glu Ser Arg Lys Leu
      50                      55                      60

Ser Asn Gly Thr Leu Leu Glu Ile Ala Lys Ile Tyr Pro Met Asp Ala
      65                      70                      75                      80

Ser Phe Asp Ser Pro Glu Asp Val Pro Glu Asp Ile Ala Glu Asn Lys
      85                      90                      95

Arg Tyr Lys Gly Ile Thr Gly Phe Thr Ile Ser Glu Val Ala Glu Gln
      100                     105                     110

Val Lys Lys Asp Phe Gly His Ile Asp Ile Leu Val His Ser Leu Ala
      115                     120                     125

Asn Ser Pro Glu Ile Ser Lys Ser Leu Leu Glu Thr Ser Arg Lys Gly
      130                     135                     140

Tyr Leu Ala Ala Leu Ser Ala Ser Ser Tyr Ser Phe Val Ser Leu Leu
      145                     150                     155                     160

Ser His Phe Gly Ser Ile Met Asn Arg Gly Gly Ser Thr Ile Ser Leu
      165                     170                     175

Thr Tyr Leu Ala Ser Met Arg Ala Val Pro Gly Tyr Gly Gly Gly Met
      180                     185                     190

Ser Ser Ala Lys Ala Ala Leu Glu Ser Asp Thr Lys Thr Leu Ala Trp
      195                     200                     205

Glu Ala Gly Arg Arg Trp Gly Ile Arg Val Asn Thr Ile Ser Ala Gly
      210                     215                     220

Pro Leu Ala Ser Arg Ala Gly Lys Ala Ile Gly Phe Ile Glu Arg Met
      225                     230                     235                     240

Val Asp Tyr Tyr Gln Glu Trp Ala Pro Ile Pro Glu Ala Met Asn Ala
      245                     250                     255

Glu Gln Val Gly Ala Val Ala Ala Phe Leu Ala Ser Pro Leu Ala Ser
      260                     265                     270

Ala Ile Thr Gly Glu Thr Leu Tyr Val Asp His Gly Ala Asn Val Met
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Gly Ile Gly Pro Glu Met Phe Pro Lys Asp Ser

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290				295															
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<211> 580																			
<212> PRT																			
<213> Chlamydia pneumoniae																			
<400> 598																			
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Asn	Ile	Glu	Cys	Leu	Thr	Glu	Asp	Val	Ala	Glu	Phe	Lys	Asp	Leu	Leu				
			20					25					30						
Tyr	Thr	Ala	His	Arg	Ile	Thr	Ser	Ser	Glu	Glu	Glu	Ser	Asp	Asn	Glu				
		35					40					45							
Ile	Gln	Pro	Gly	Ala	Ile	Leu	Lys	Gly	Thr	Val	Val	Asp	Ile	Asn	Lys				
	50					55					60								
Asp	Phe	Val	Val	Val	Asp	Val	Gly	Leu	Lys	Ser	Glu	Gly	Val	Ile	Pro				
65					70					75					80				
Met	Ser	Glu	Phe	Ile	Asp	Ser	Ser	Glu	Gly	Leu	Val	Leu	Gly	Ala	Glu				
				85					90					95					
Val	Glu	Val	Tyr	Leu	Asp	Gln	Ala	Glu	Asp	Glu	Glu	Gly	Lys	Val	Val				
			100					105					110						
Leu	Ser	Arg	Glu	Lys	Ala	Thr	Arg	Gln	Arg	Gln	Trp	Glu	Tyr	Ile	Leu				
		115					120					125							
Ala	His	Cys	Glu	Glu	Gly	Ser	Ile	Val	Lys	Gly	Gln	Ile	Thr	Arg	Lys				
	130					135					140								
Val	Lys	Gly	Gly	Leu	Ile	Val	Asp	Ile	Gly	Met	Glu	Ala	Phe	Leu	Pro				
145					150					155					160				
Gly	Ser	Gln	Ile	Asp	Asn	Lys	Lys	Ile	Lys	Asn	Leu	Asp	Asp	Tyr	Val				
				165					170					175					
Gly	Lys	Val	Cys	Glu	Phe	Lys	Ile	Leu	Lys	Ile	Asn	Val	Glu	Arg	Arg				
			180					185					190						
Asn	Ile	Val	Val	Ser	Arg	Arg	Glu	Leu	Leu	Glu	Ala	Glu	Arg	Ile	Ser				
		195					200					205							
Lys	Lys	Ala	Glu	Leu	Ile	Glu	Gln	Ile	Ser	Ile	Gly	Glu	Tyr	Arg	Lys				
	210					215					220								
Gly	Val	Val	Lys	Asn	Ile	Thr	Asp	Phe	Gly	Val	Phe	Leu	Asp	Leu	Asp				
225					230					235					240				
Gly	Ile	Asp	Gly	Leu	Leu	His	Ile	Thr	Asp	Met	Thr	Trp	Lys	Arg	Ile				
				245					250					255					
Arg	His	Pro	Ser	Glu	Met	Val	Glu	Leu	Asn	Gln	Glu	Leu	Glu	Val	Ile				
			260					265					270						
Ile	Leu	Ser	Val	Asp	Lys	Glu	Lys	Gly	Arg	Val	Ala	Leu	Gly	Leu	Lys				
		275					280					285							

Gln Lys Glu His Asn Pro Trp Glu Asp Ile Glu Lys Lys Tyr Pro Pro  
 290 295 300  
 Gly Lys Arg Val Leu Gly Lys Ile Val Lys Leu Leu Pro Tyr Gly Ala  
 305 310 315 320  
 Phe Ile Glu Ile Glu Glu Gly Ile Glu Gly Leu Ile His Ile Ser Glu  
 325 330 335  
 Met Ser Trp Val Lys Asn Ile Val Asp Pro Ser Glu Val Val Asn Lys  
 340 345 350  
 Gly Asp Glu Val Glu Ala Ile Val Leu Ser Ile Gln Lys Asp Glu Gly  
 355 360 365  
 Lys Ile Ser Leu Gly Leu Lys Gln Thr Glu Arg Asn Pro Trp Asp Asn  
 370 375 380  
 Ile Glu Glu Lys Tyr Pro Ile Gly Leu His Val Asn Ala Glu Ile Lys  
 385 390 395 400  
 Asn Leu Thr Asn Tyr Gly Ala Phe Val Glu Leu Glu Pro Gly Ile Glu  
 405 410 415  
 Gly Leu Ile His Ile Ser Asp Met Ser Trp Ile Lys Lys Val Ser His  
 420 425 430  
 Pro Ser Glu Leu Phe Lys Lys Gly Asn Ser Val Glu Ala Val Ile Leu  
 435 440 445  
 Ser Val Asp Lys Glu Ser Lys Lys Ile Thr Leu Gly Val Lys Gln Leu  
 450 455 460  
 Ser Ser Asn Pro Trp Asn Glu Ile Glu Ala Met Phe Pro Ala Gly Thr  
 465 470 475 480  
 Val Ile Ser Gly Val Val Thr Lys Ile Thr Ala Phe Gly Ala Phe Val  
 485 490 495  
 Glu Leu Gln Asn Gly Ile Glu Gly Leu Ile His Val Ser Glu Leu Ser  
 500 505 510  
 Asp Lys Pro Phe Ala Lys Ile Glu Asp Ile Ile Ser Ile Gly Glu Asn  
 515 520 525  
 Val Ser Ala Lys Val Ile Lys Leu Asp Pro Asp His Lys Lys Val Ser  
 530 535 540  
 Leu Ser Val Lys Glu Tyr Leu Ala Asp Asn Ala Tyr Asp Gln Asp Ser  
 545 550 555 560  
 Arg Thr Glu Leu Asp Phe Lys Asp Ser Gln Gly Pro Lys Glu Arg Lys  
 565 570 575  
 Lys Lys Gly Lys  
 580

&lt;210&gt; 599

&lt;211&gt; 358

&lt;212&gt; PRT

&lt;213&gt; Chlamydia trachomatis serovar D

&lt;400&gt; 599

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Met Arg Lys Thr Val Ile Val Ala Met Ser Gly Gly Val Asp Ser Ser
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Val Val Ala Tyr Leu Leu Lys Lys Gln Gly Glu Tyr Asn Val Val Gly
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Leu Phe Met Lys Asn Trp Gly Glu Gln Asp Glu Asn Gly Glu Cys Thr
                35                      40                      45

Ala Thr Lys Asp Phe Arg Asp Val Glu Arg Ile Ala Glu Gln Leu Ser
                50                      55                      60

Ile Pro Tyr Tyr Thr Val Ser Phe Ser Lys Glu Tyr Lys Glu Arg Val
                65                      70                      75                      80

Phe Ser Arg Phe Leu Arg Glu Tyr Ala Asn Gly Tyr Thr Pro Asn Pro
                85                      90                      95

Asp Val Leu Cys Asn Arg Glu Ile Lys Phe Asp Leu Leu Gln Lys Lys
                100                      105                      110

Val Arg Glu Leu Lys Gly Asp Phe Leu Ala Thr Gly His Tyr Cys Arg
                115                      120                      125

Gly Gly Ala Asp Gly Thr Gly Leu Ser Arg Gly Ile Asp Pro Asn Lys
                130                      135                      140

Asp Gln Ser Tyr Phe Leu Cys Gly Thr Pro Lys Asp Ala Leu Ser Asn
                145                      150                      155                      160

Val Leu Phe Pro Leu Gly Gly Met Tyr Lys Thr Glu Val Arg Arg Ile
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Ala Gln Glu Ala Gly Leu Ala Thr Ala Thr Lys Lys Asp Ser Thr Gly
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Ile Cys Phe Ile Gly Lys Arg Pro Phe Lys Ser Phe Leu Glu Gln Phe
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Val Ala Asp Ser Pro Gly Asp Ile Ile Asp Phe Asp Thr Gln Gln Val
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Val Gly Arg His Glu Gly Ala His Tyr Tyr Thr Ile Gly Gln Arg Arg
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Gly Leu Asn Ile Gly Gly Met Glu Lys Pro Cys Tyr Val Leu Ser Lys
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Asn Met Glu Lys Asn Ile Val Tyr Ile Val Arg Gly Glu Asp His Pro
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Leu Leu Tyr Arg Gln Glu Leu Leu Ala Lys Glu Leu Asn Trp Phe Val
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Pro Leu Gln Glu Pro Met Ile Cys Ser Ala Lys Val Arg Tyr Arg Ser
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